LA-UR-18-29481
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Title: General Employee Training Online SS 43094

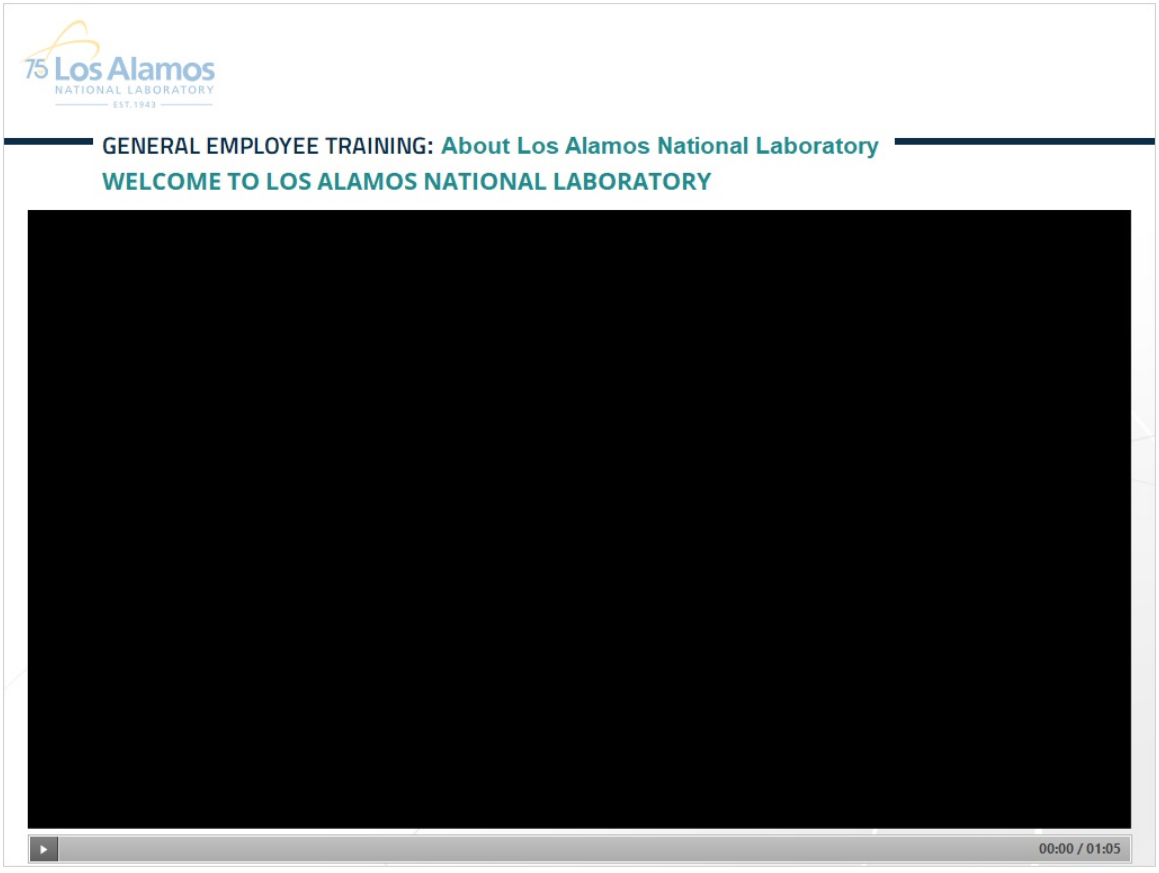
Author(s): Rinke, Helen Mae

Intended for: Training

Issued: 2019-05-17 (rev.1)

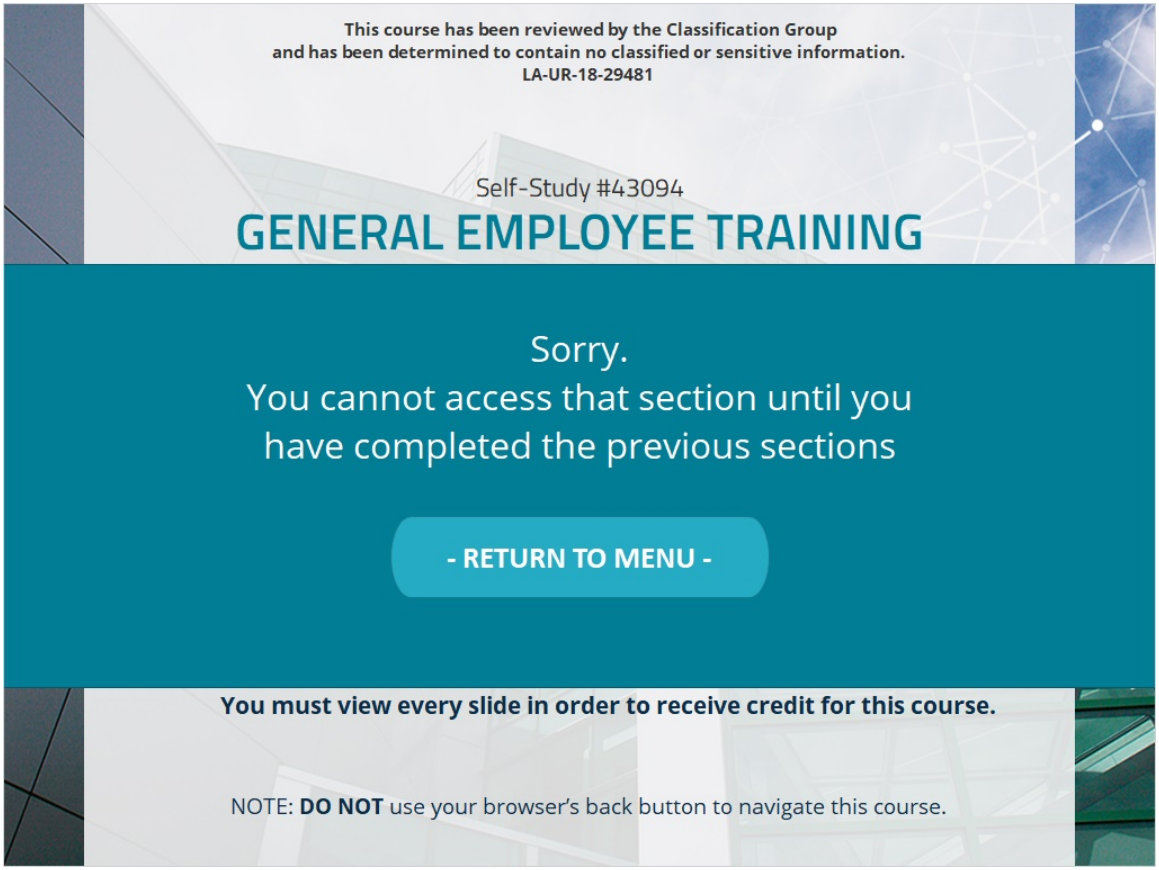
General Employee Training Online SS 43094

8.1 Introduction



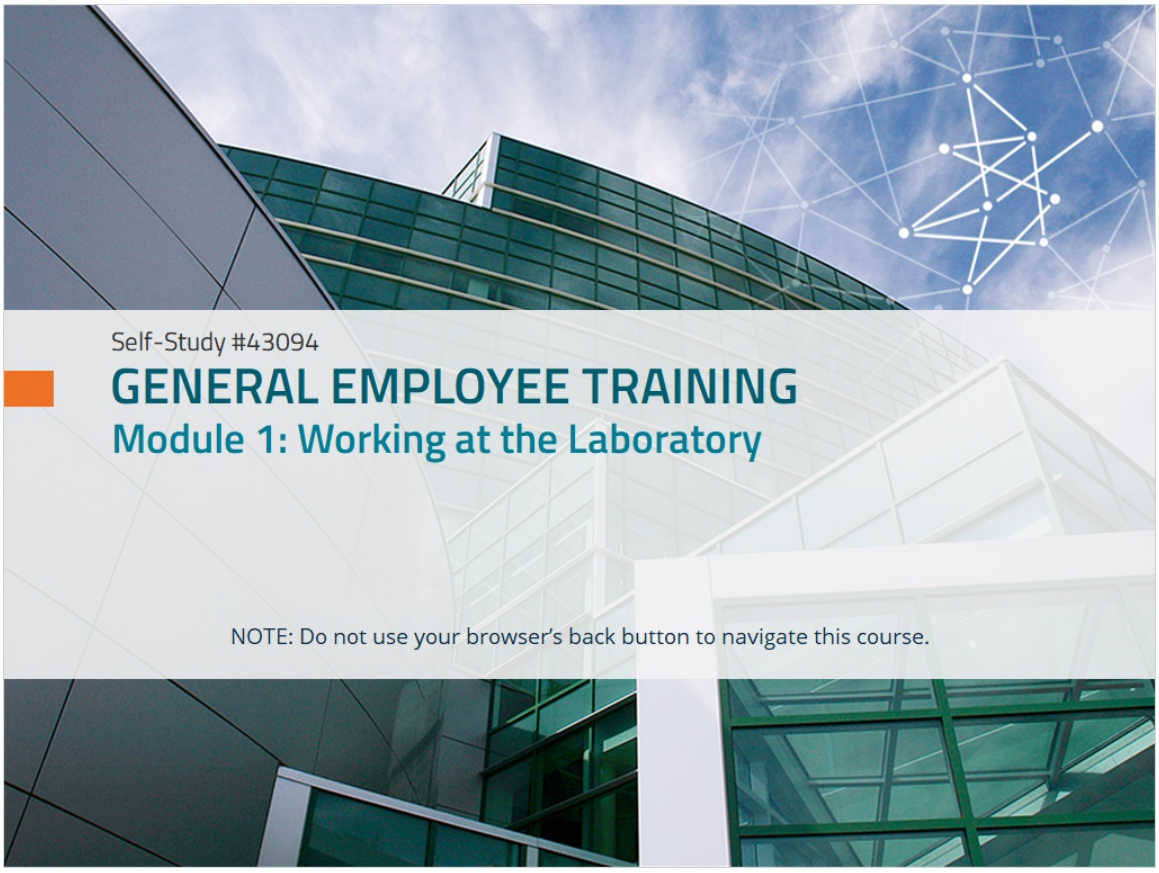
8.2 GENERAL EMPLOYEE TRAINING

SORRY (Slide Layer)

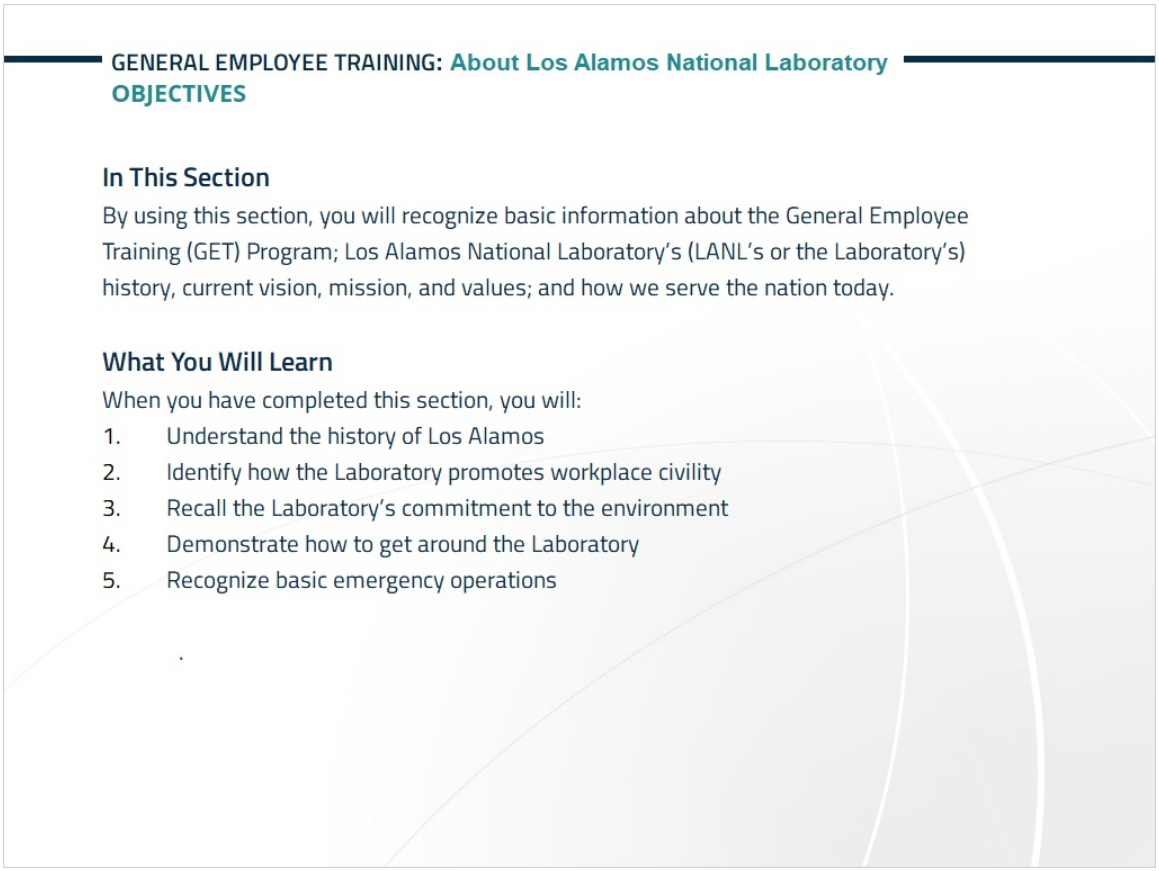


1. LANL

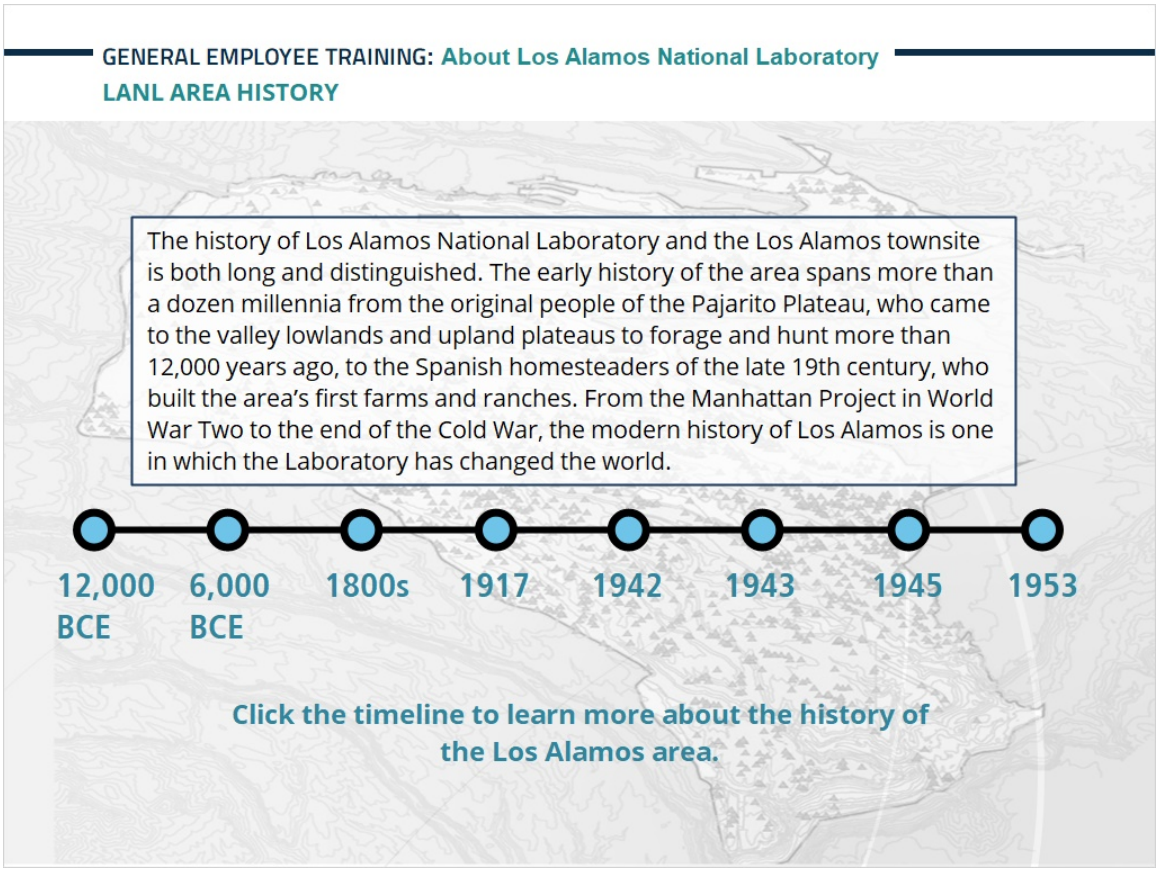
1.1 GENERAL EMPLOYEE TRAINING



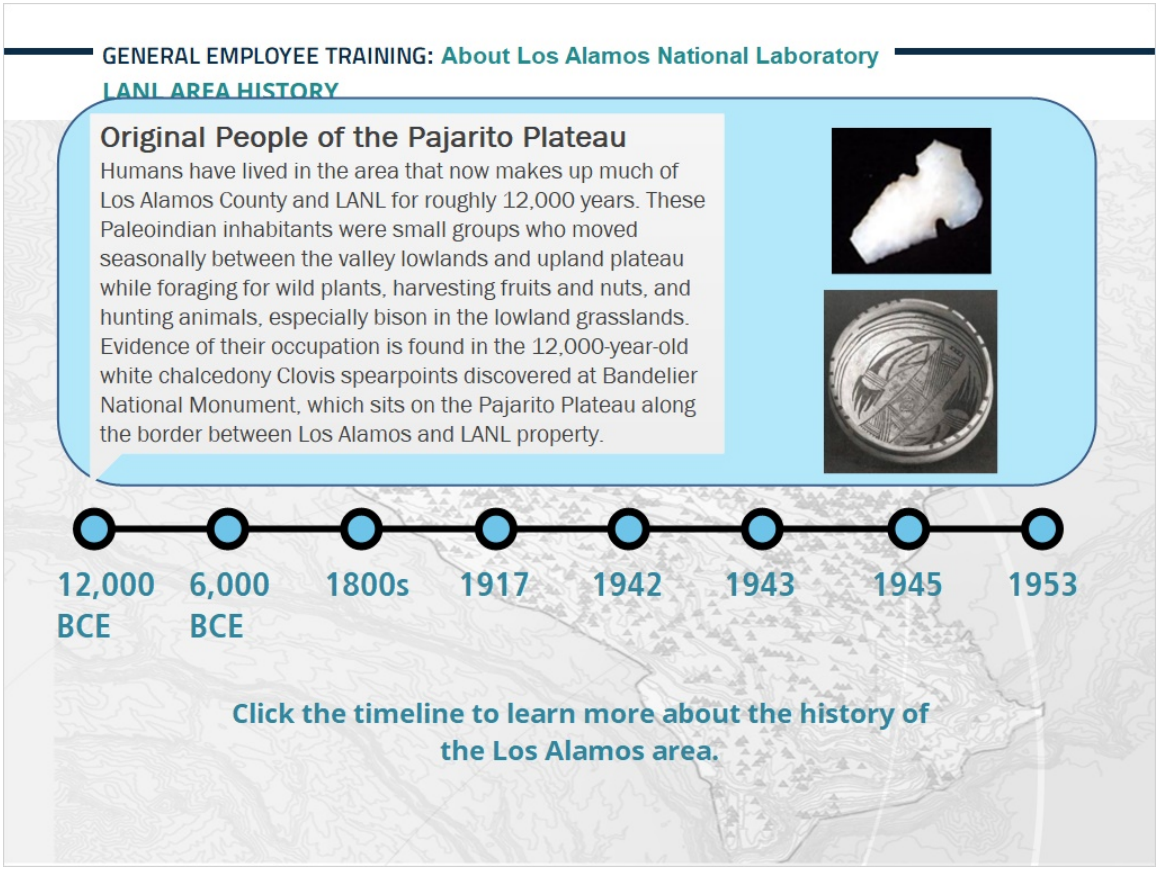
1.2 Objectives



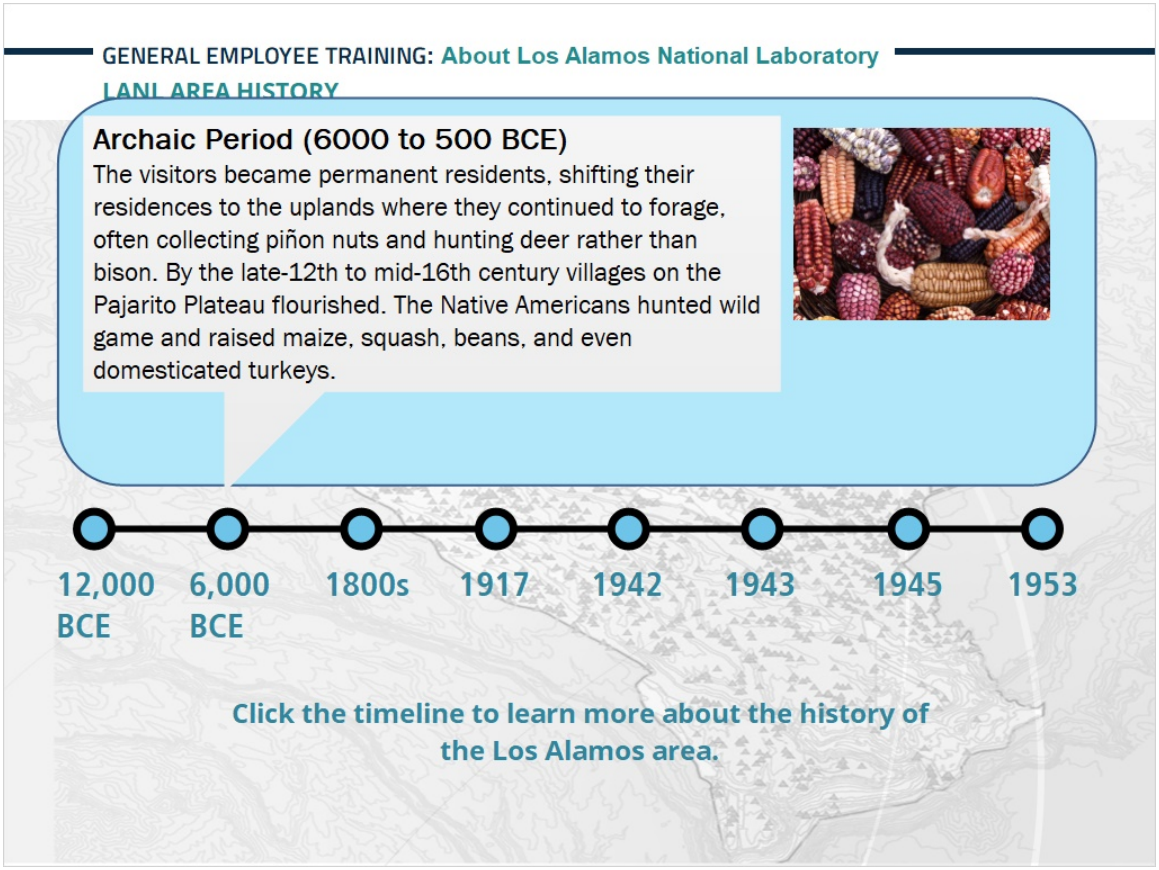
1.3 History


GENERAL EMPLOYEE TRAINING: About Los Alamos National Laboratory
LANL AREA HISTORY
The history of Los Alamos National Laboratory and the Los Alamos townsite is both long and distinguished. The early history of the area spans more than a dozen millennia from the original people of the Pajarito Plateau, who came to the valley lowlands and upland plateaus to forage and hunt more than 12,000 years ago, to the Spanish homesteaders of the late 19th century, who built the area's first farms and ranches. From the Manhattan Project in World War Two to the end of the Cold War, the modern history of Los Alamos is one in which the Laboratory has changed the world.
12,000 BCE
6,000 BCE
1800s
1917
1942
1943
1945
1953
Click the timeline to learn more about the history of the Los Alamos area.

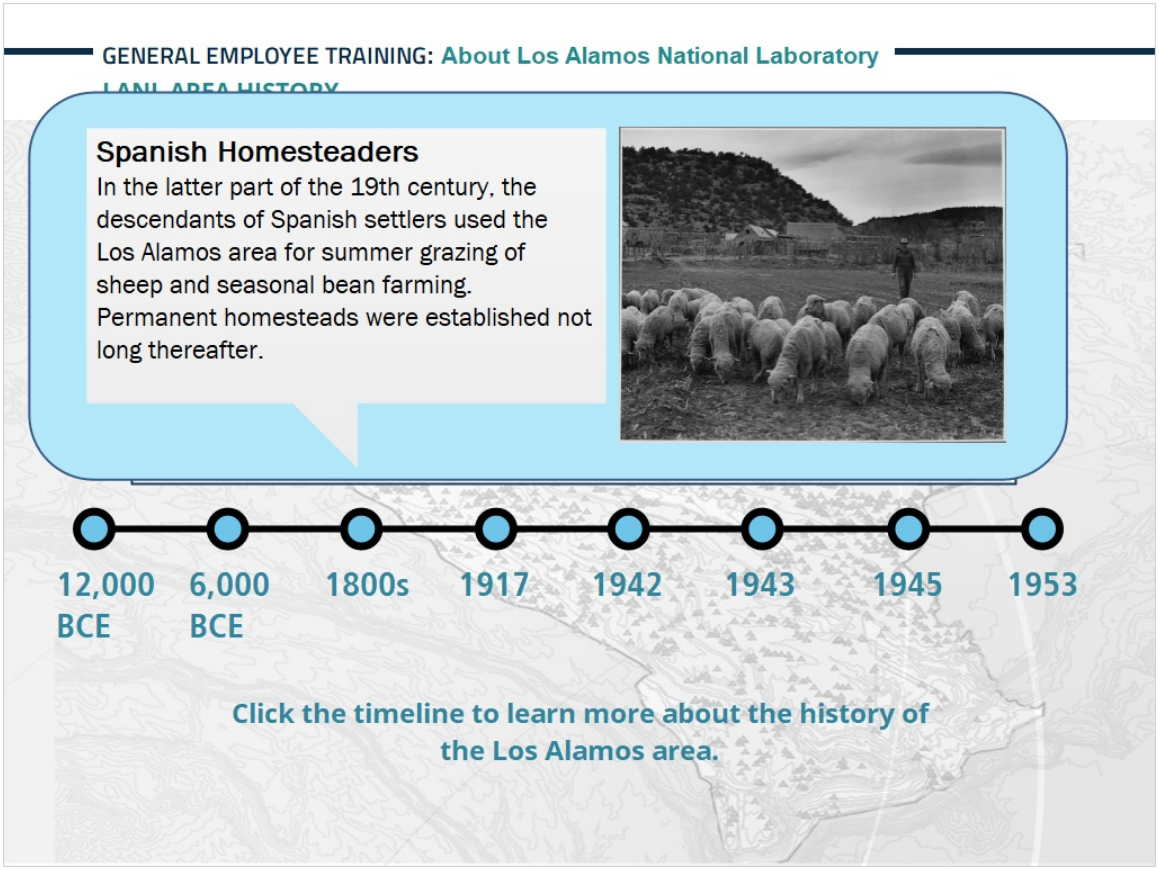
12,000BCE (Slide Layer)



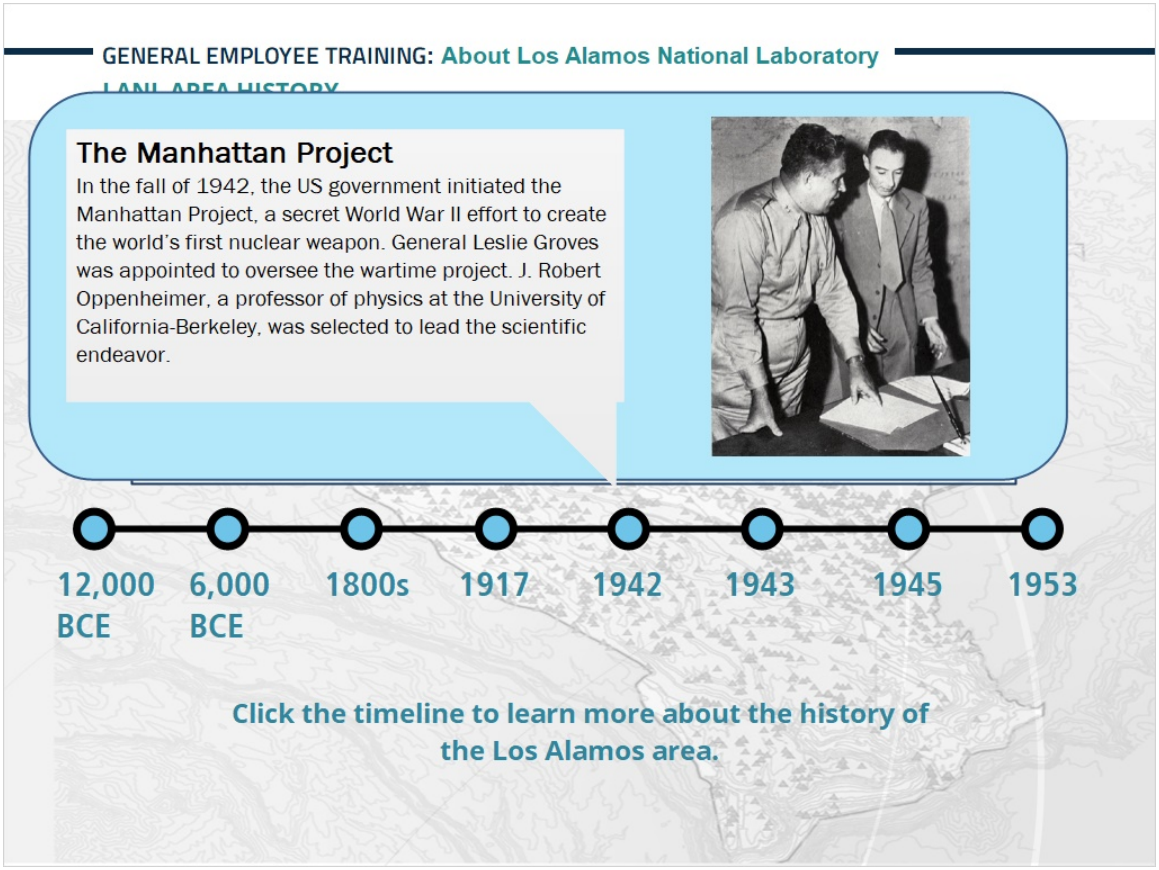
6000 BCE (Slide Layer)



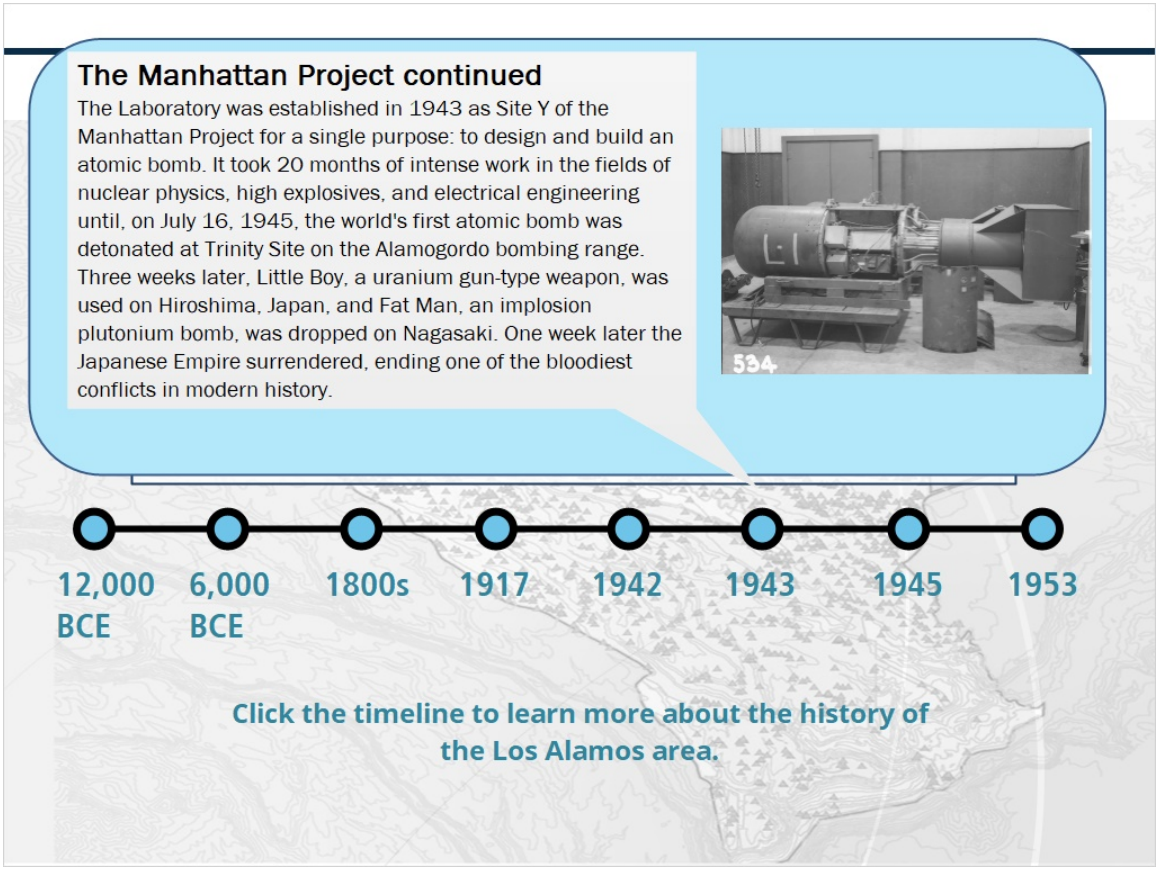
1800s (Slide Layer)



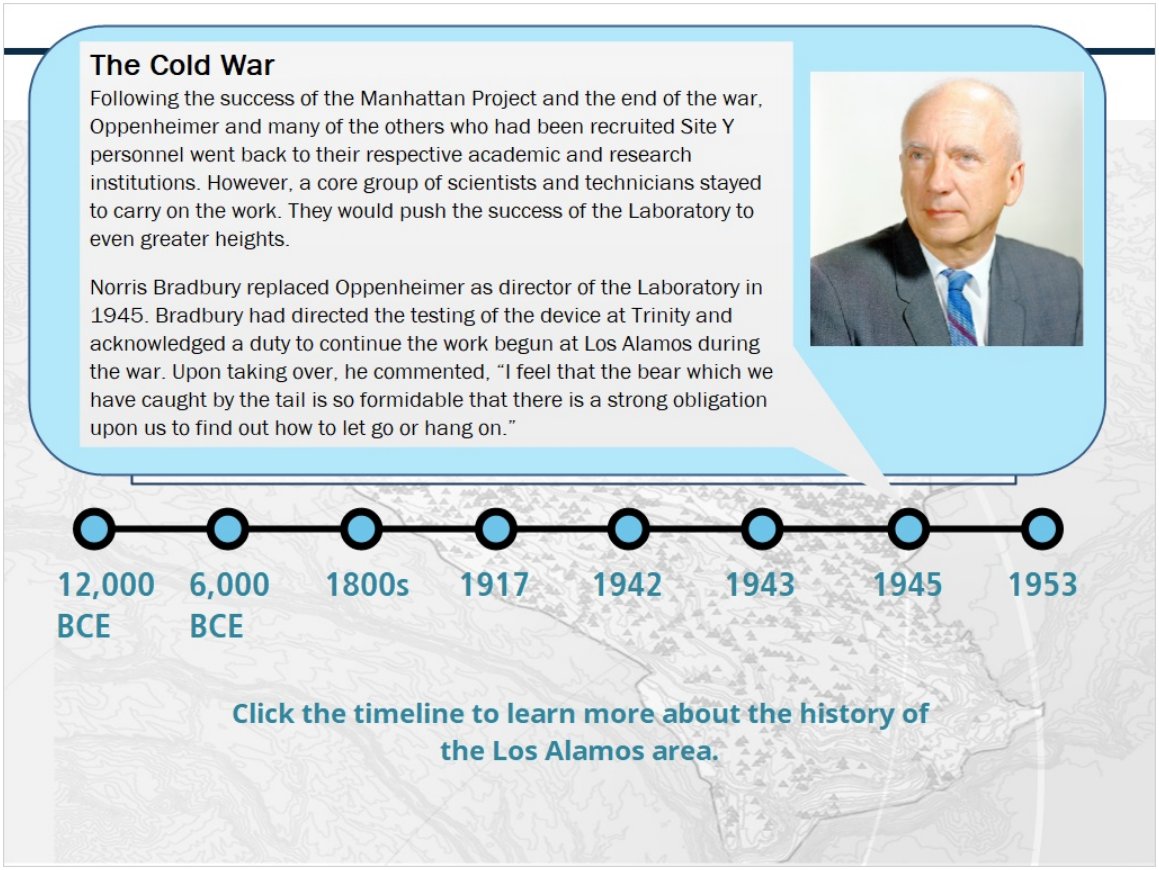
1942 (Slide Layer)



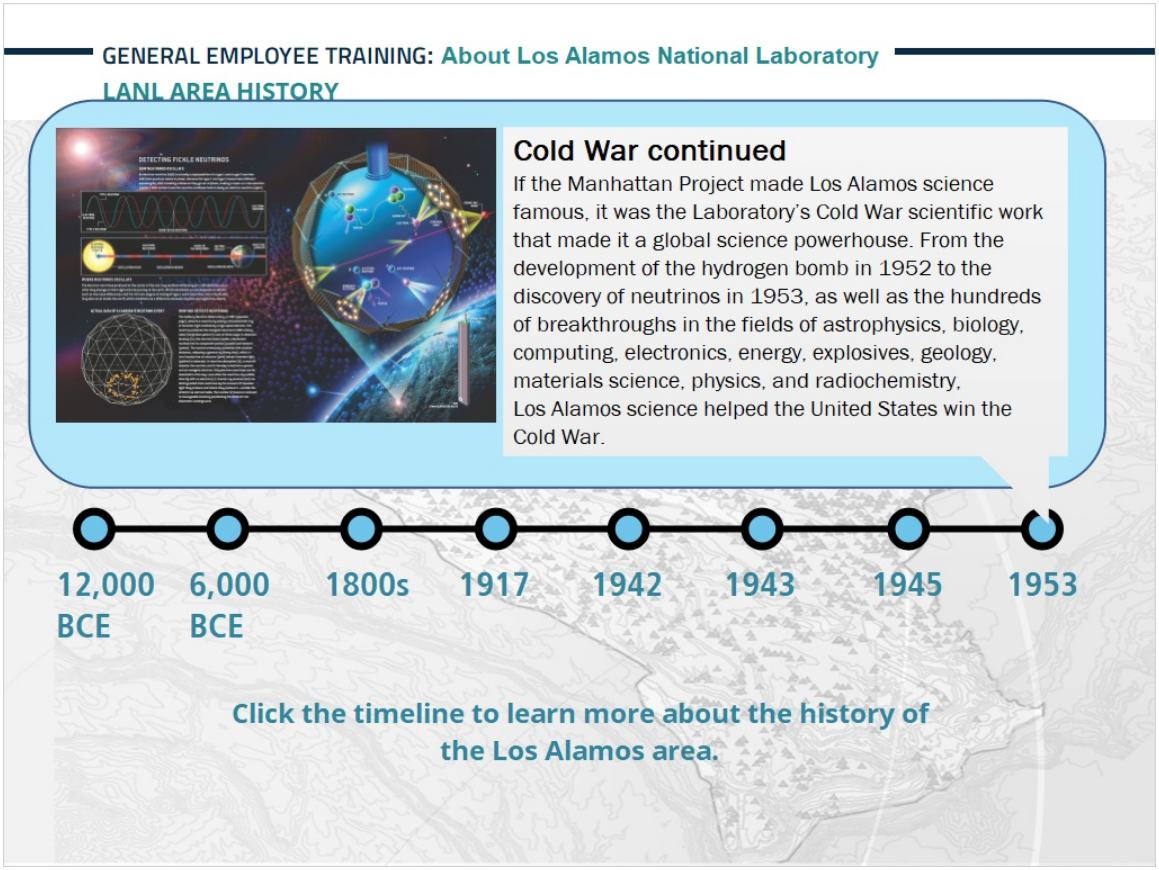
1943 (Slide Layer)



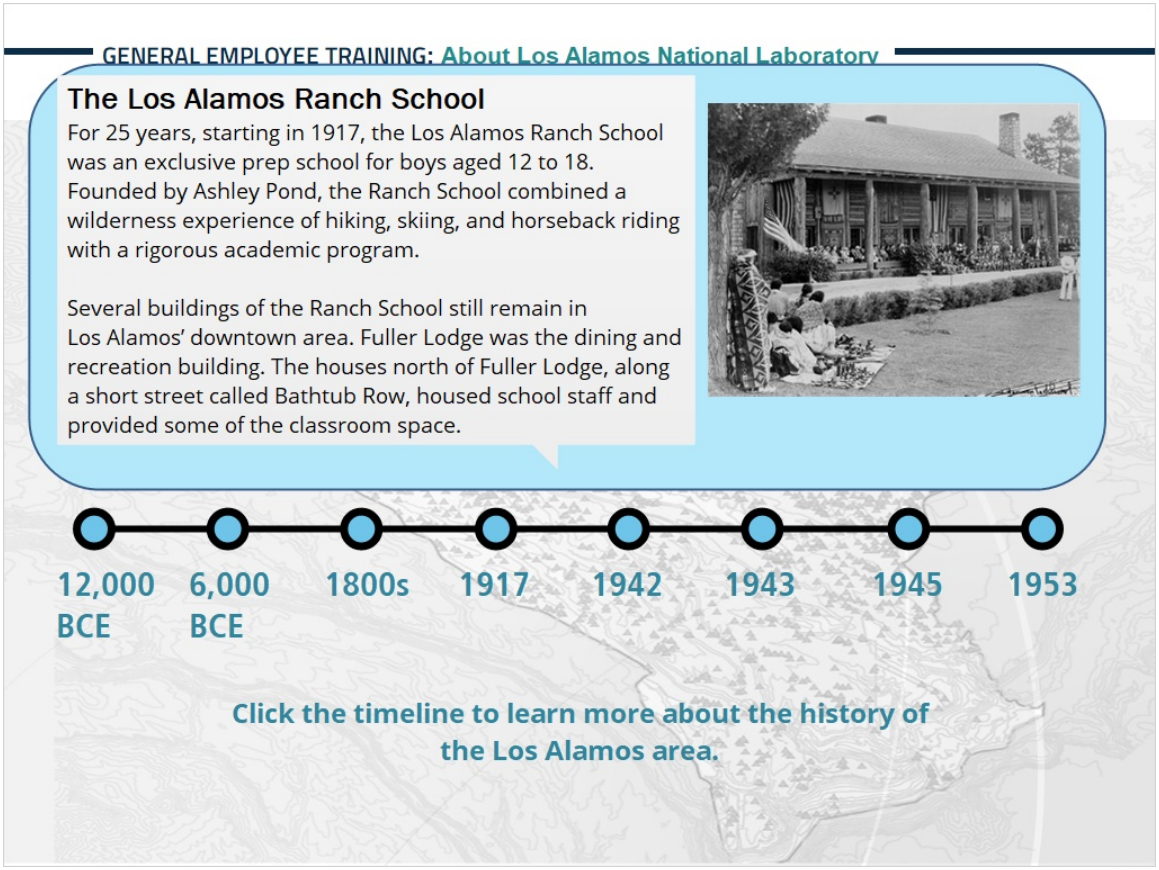
1945 (Slide Layer)



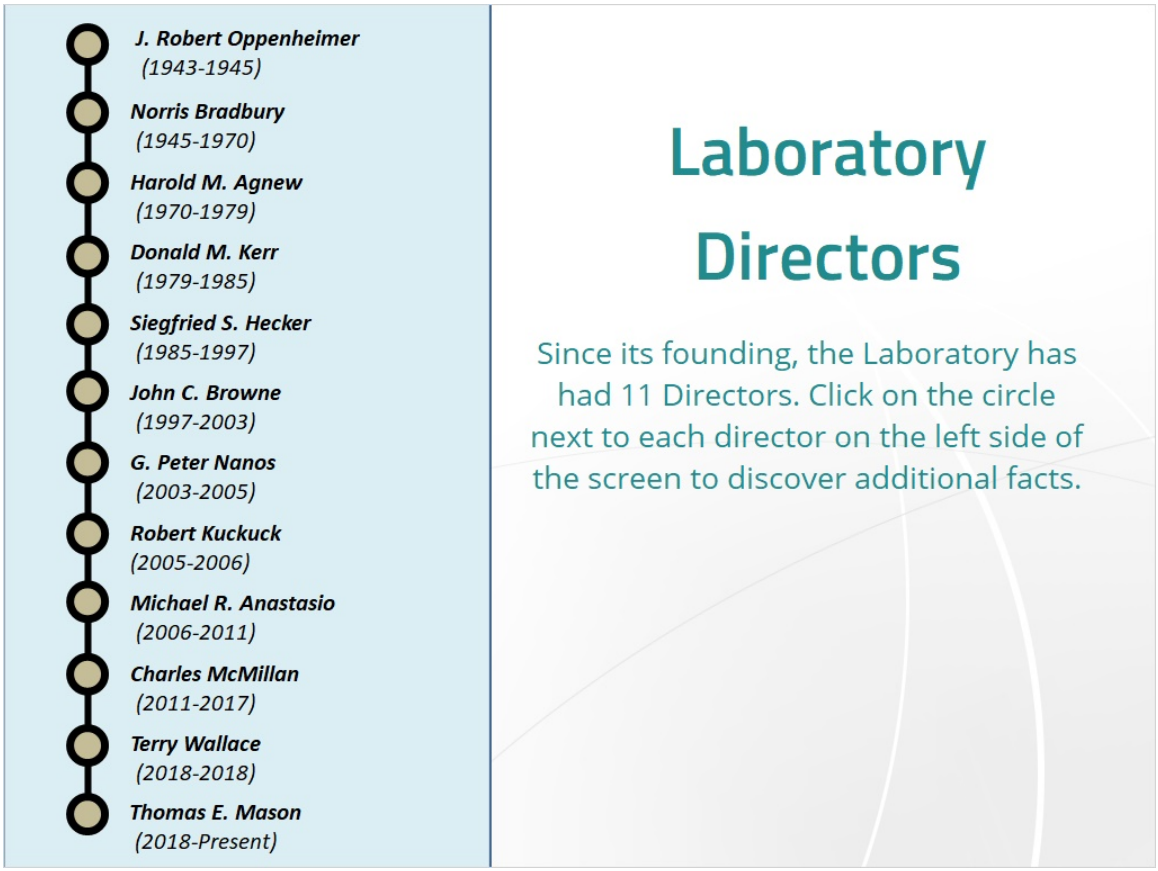
1953 (Slide Layer)



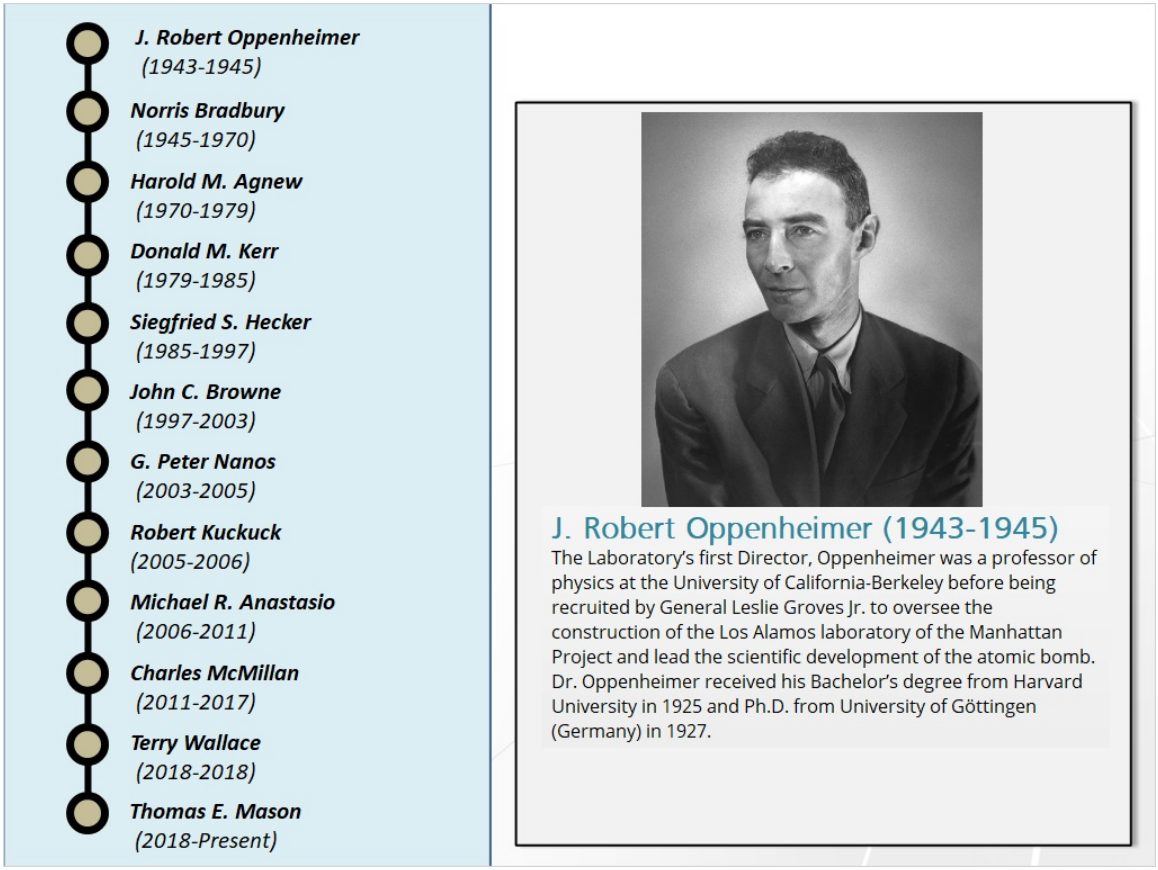
1917 (Slide Layer)



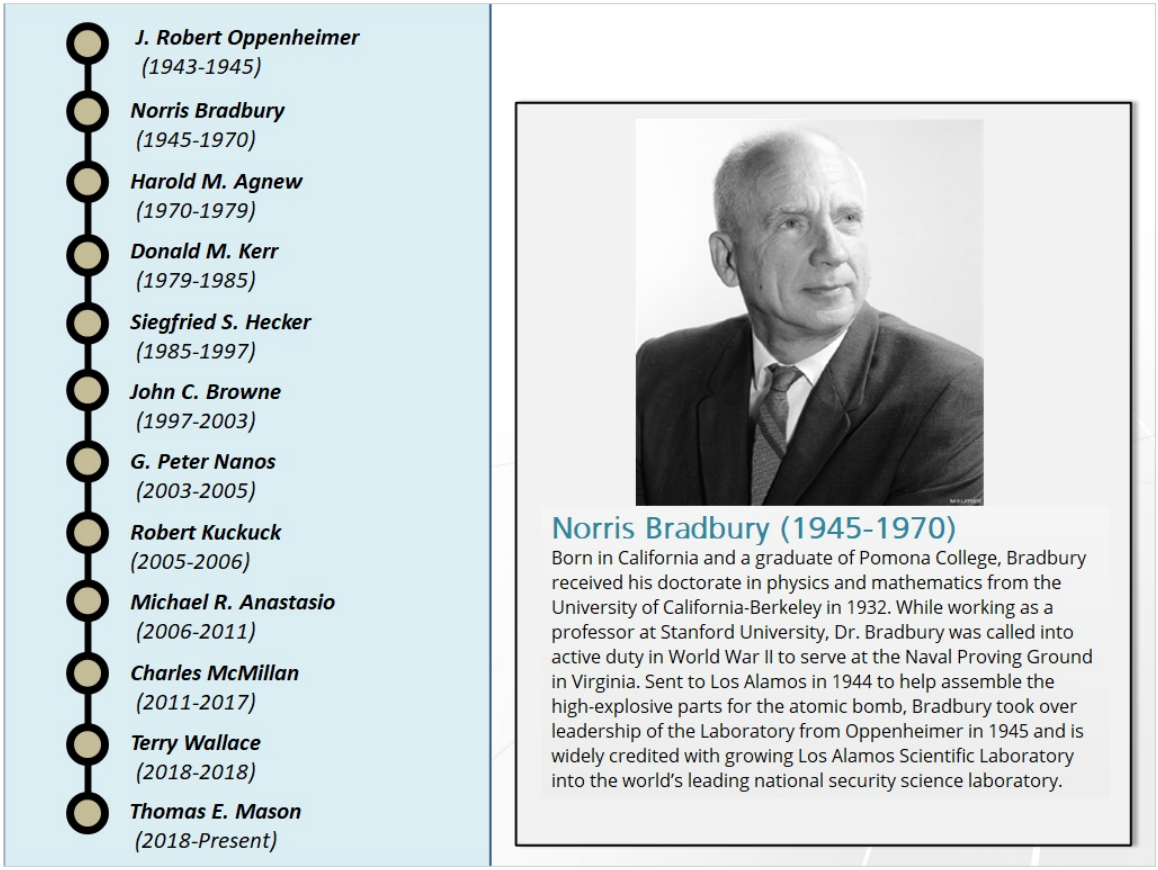
1.4 Directors



oppie (Slide Layer)



bradbury (Slide Layer)



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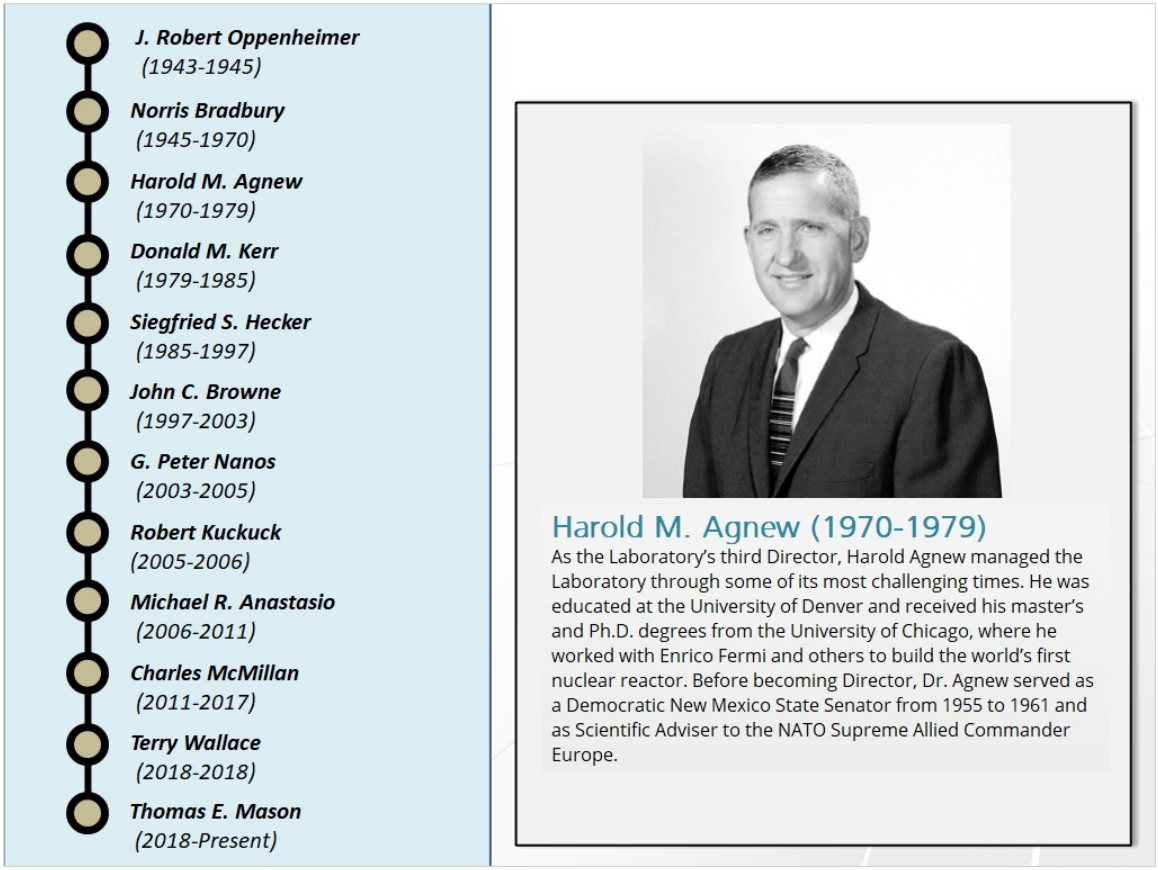
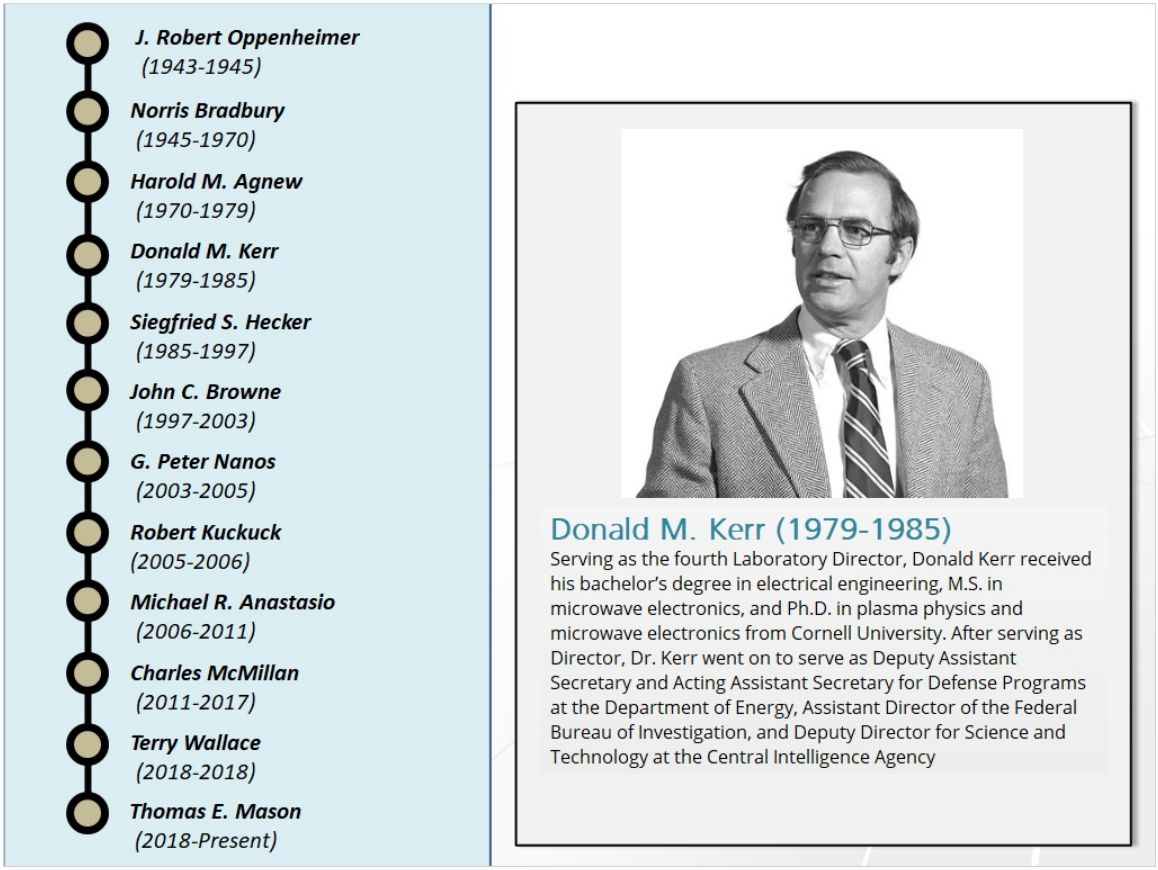


kerr (Slide Layer)



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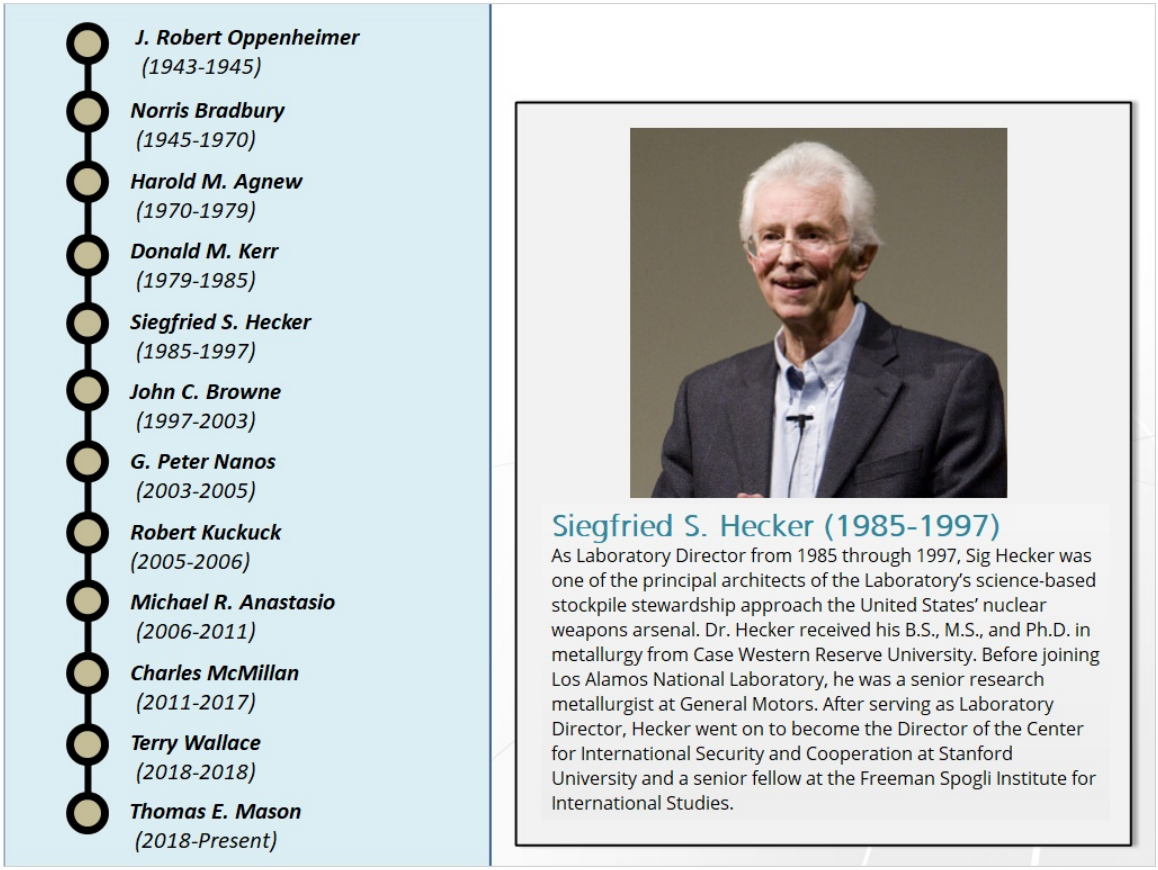
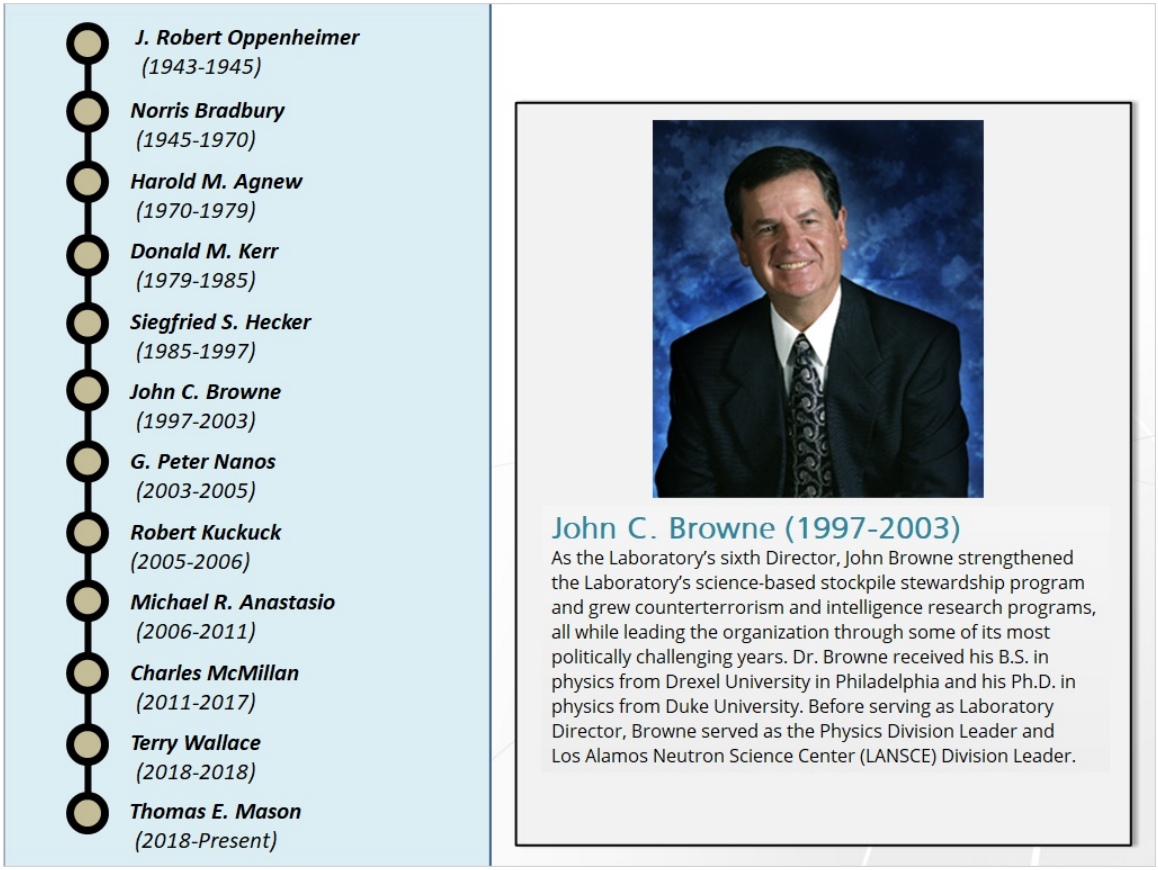


brown (Slide Layer)



nanos (Slide Layer)

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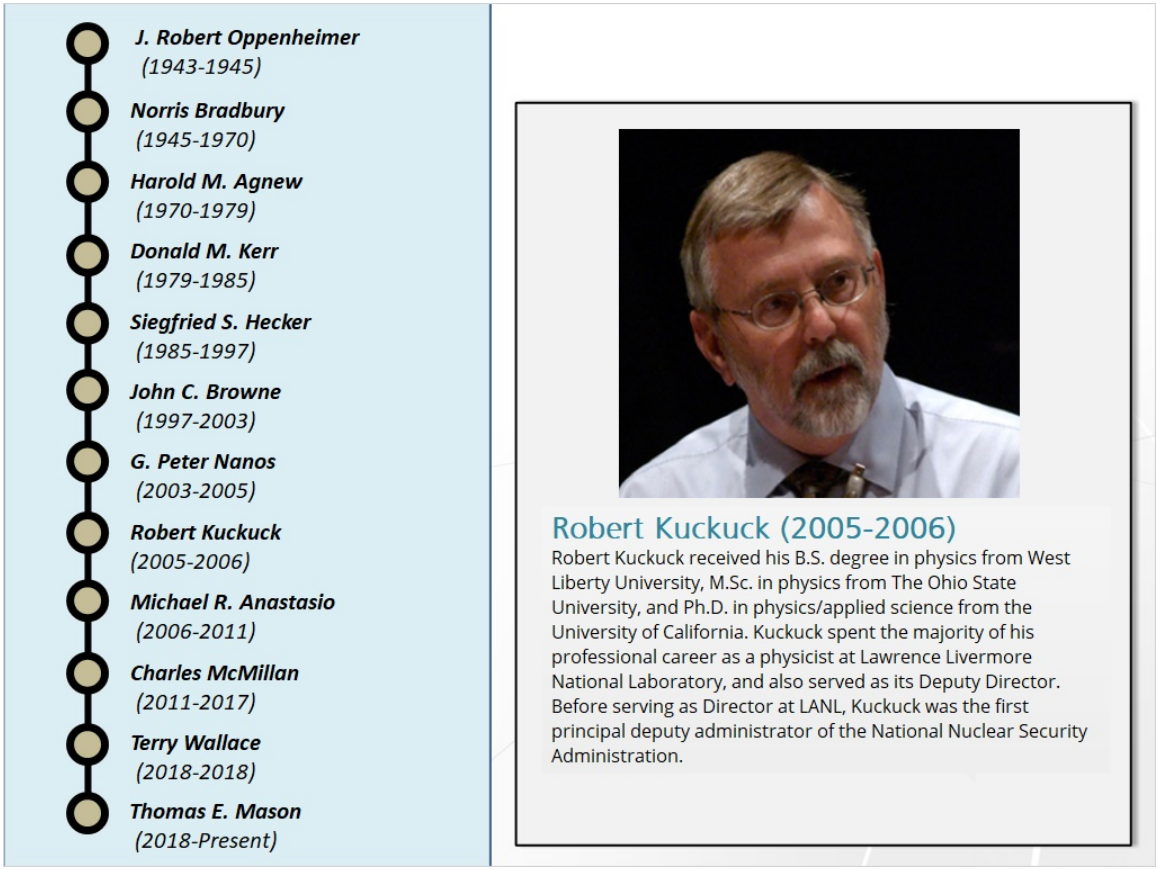
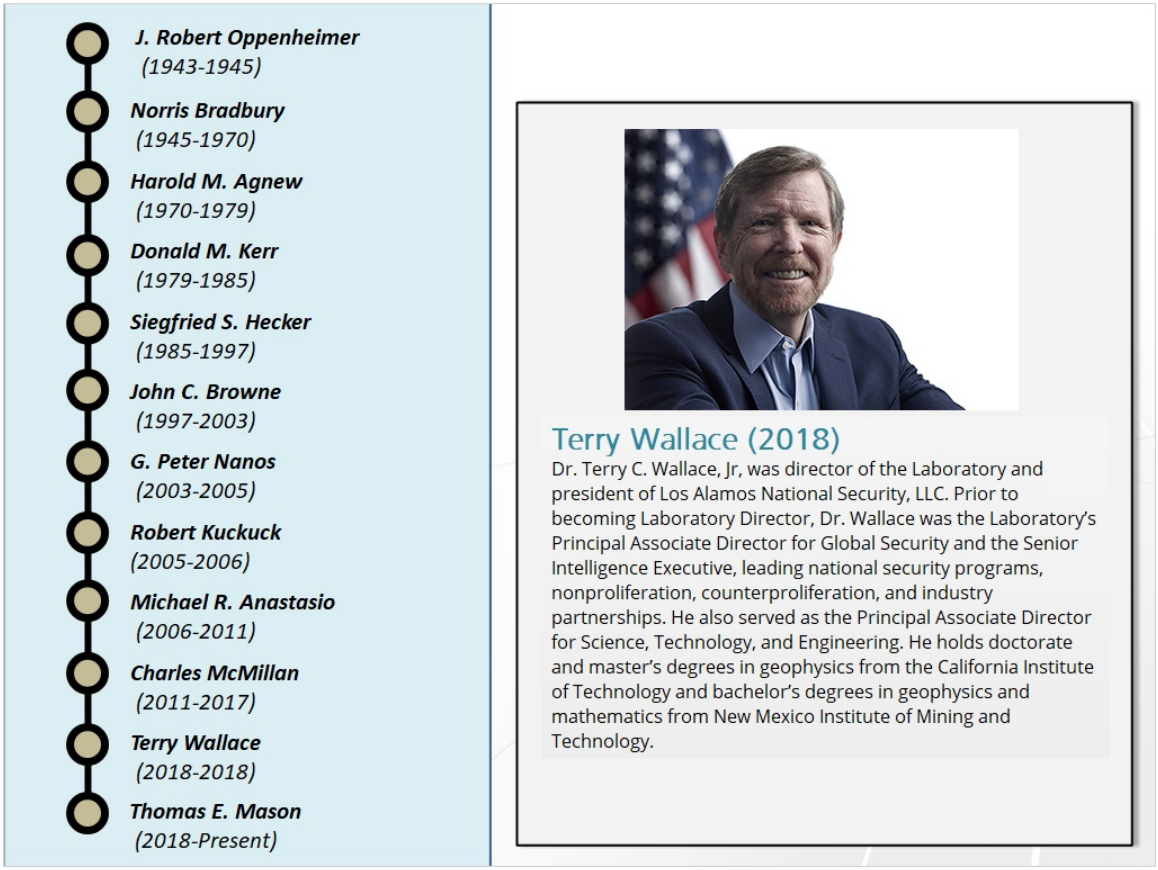


anastasio (Slide Layer)

Mcmillian (Slide Layer)

Wallace (Slide Layer)



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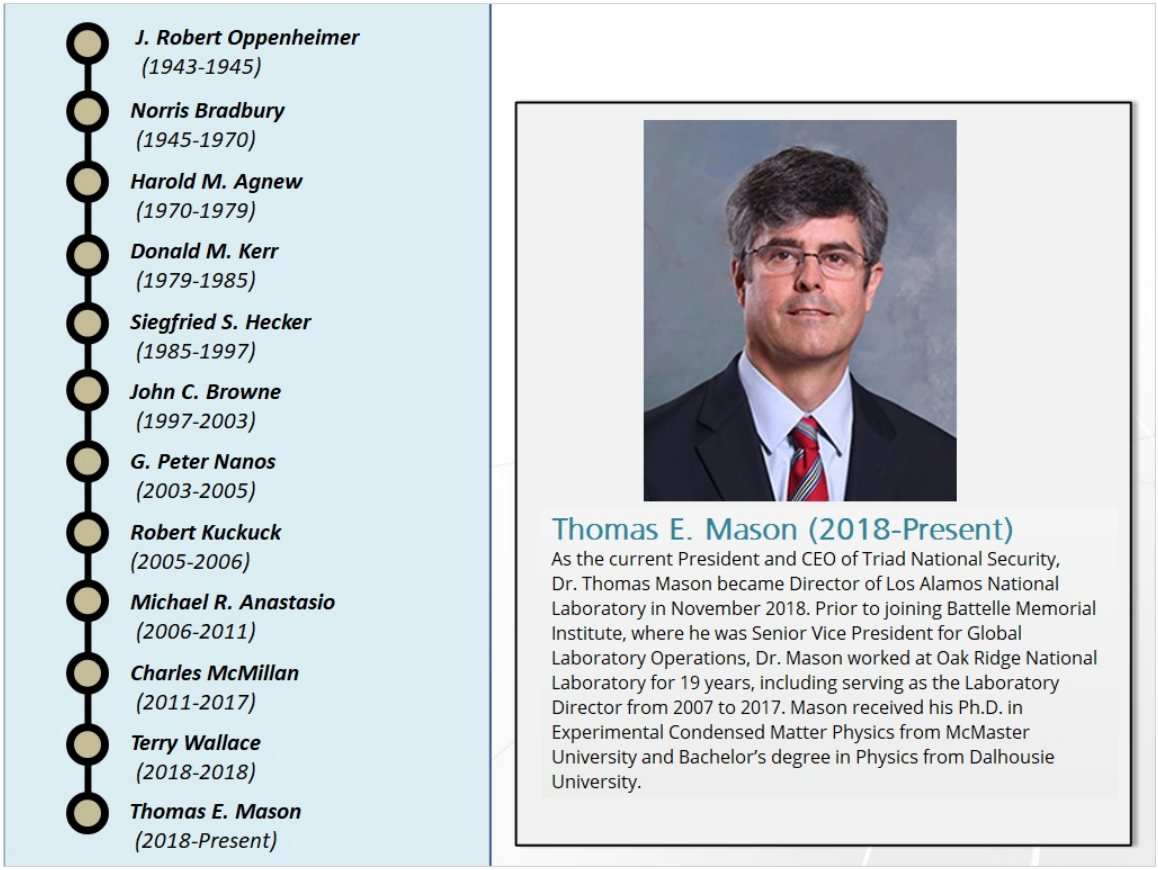
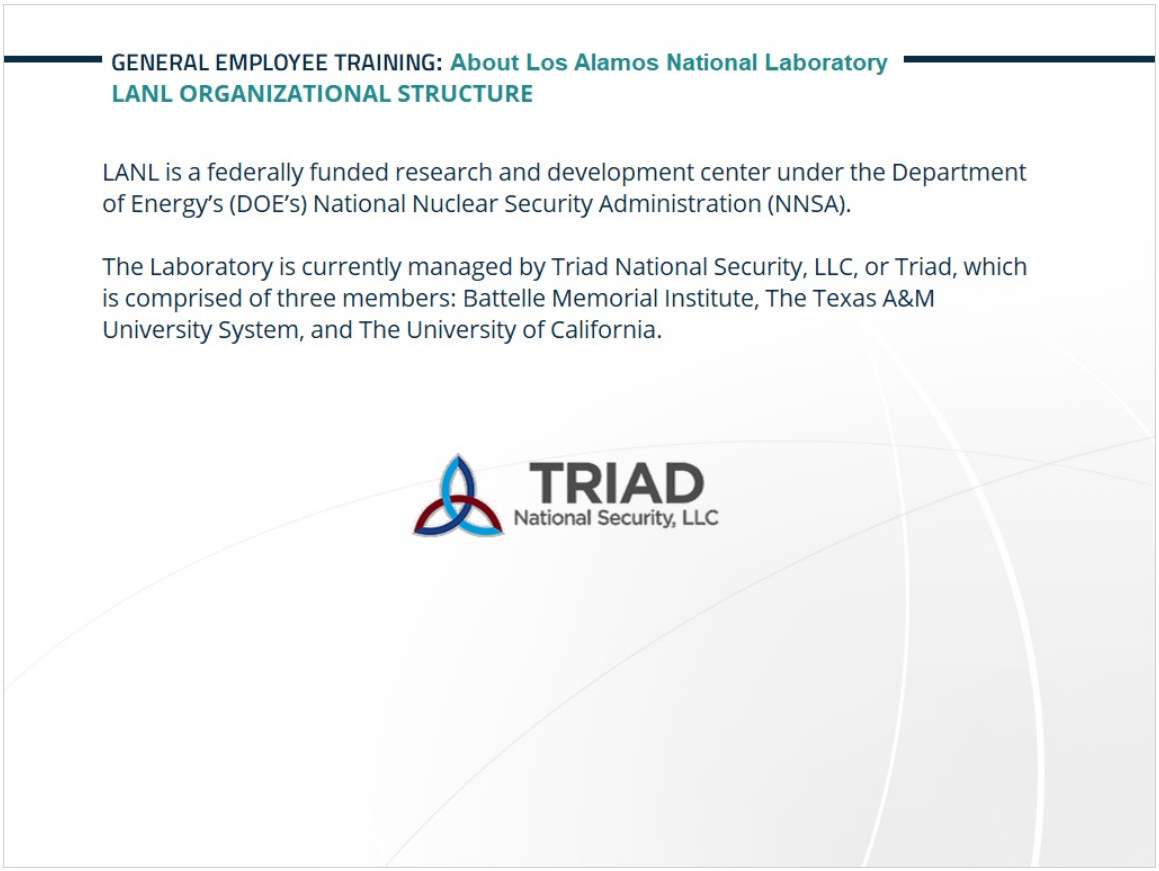


1.5 Organizational Structure

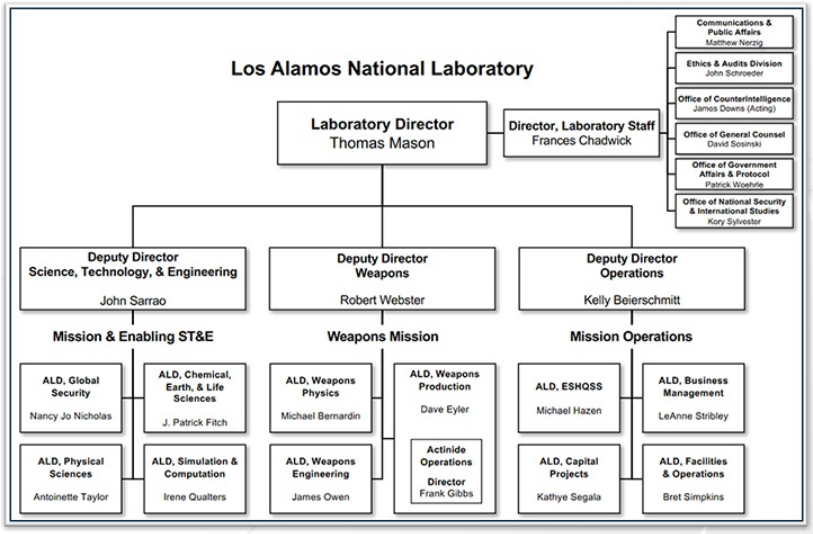


1.6 Leadership Team

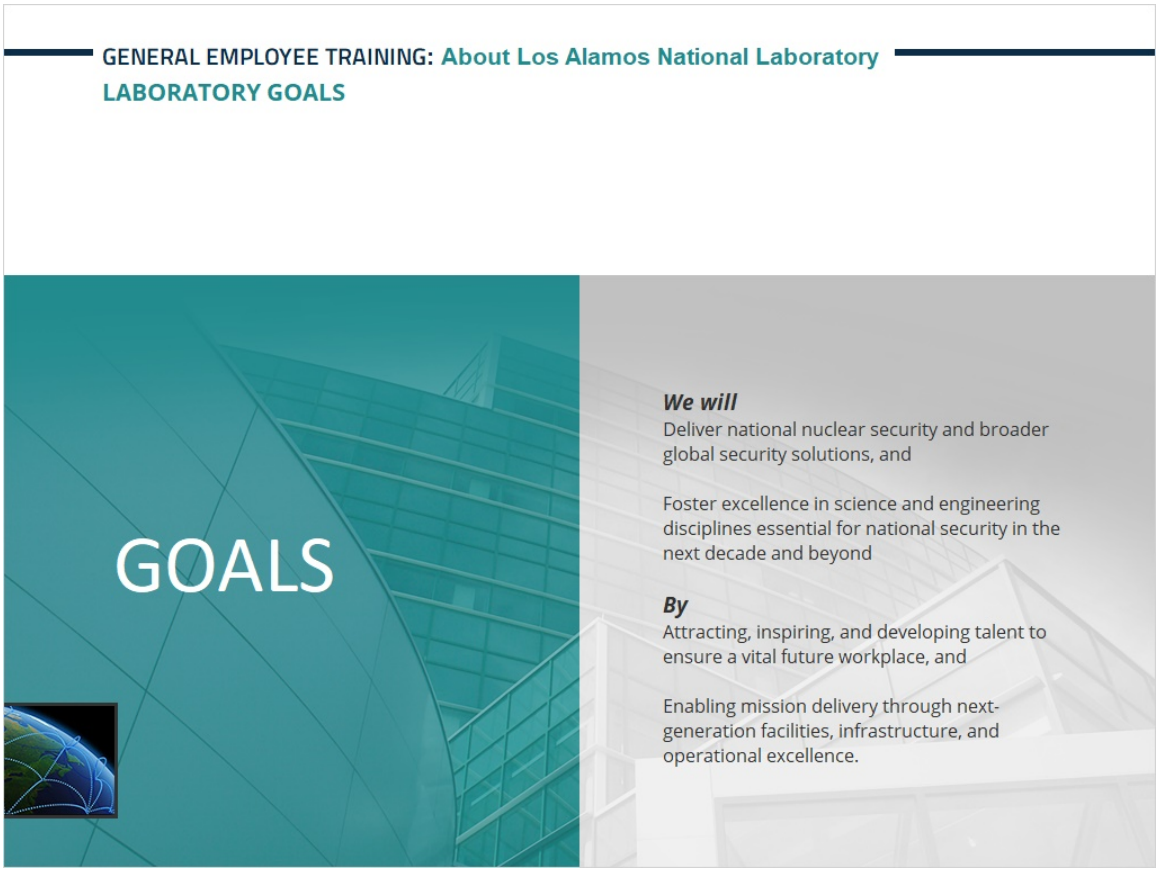
GENERAL EMPLOYEE TRAINING: About Los Alamos National Laboratory

LANL ORGANIZATIONAL STRUCTURE

Under the Laboratory Director, the Laboratory is organized into three directorates: Science, Technology and Engineering; Weapons; and Operations. Under these directorates, there are eleven associate laboratory directorates.

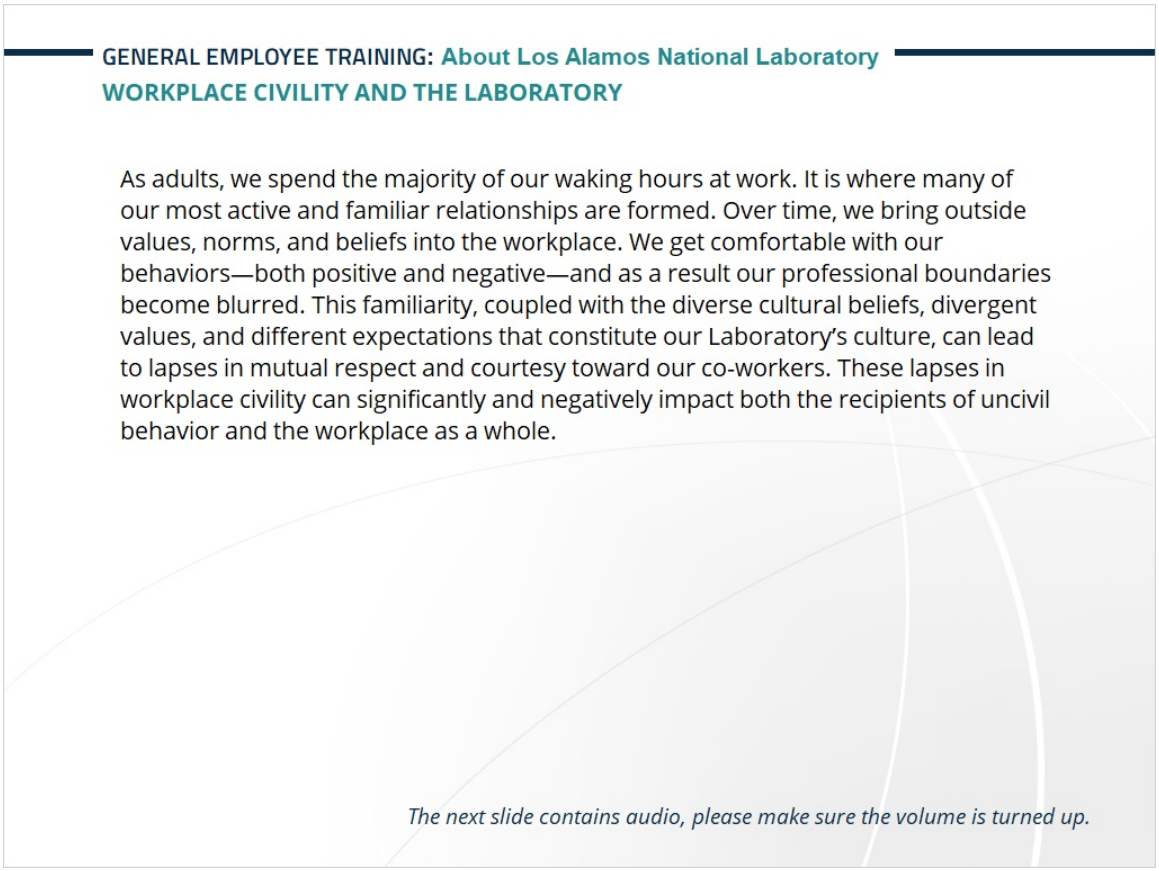


1.7 Laboratory Goals

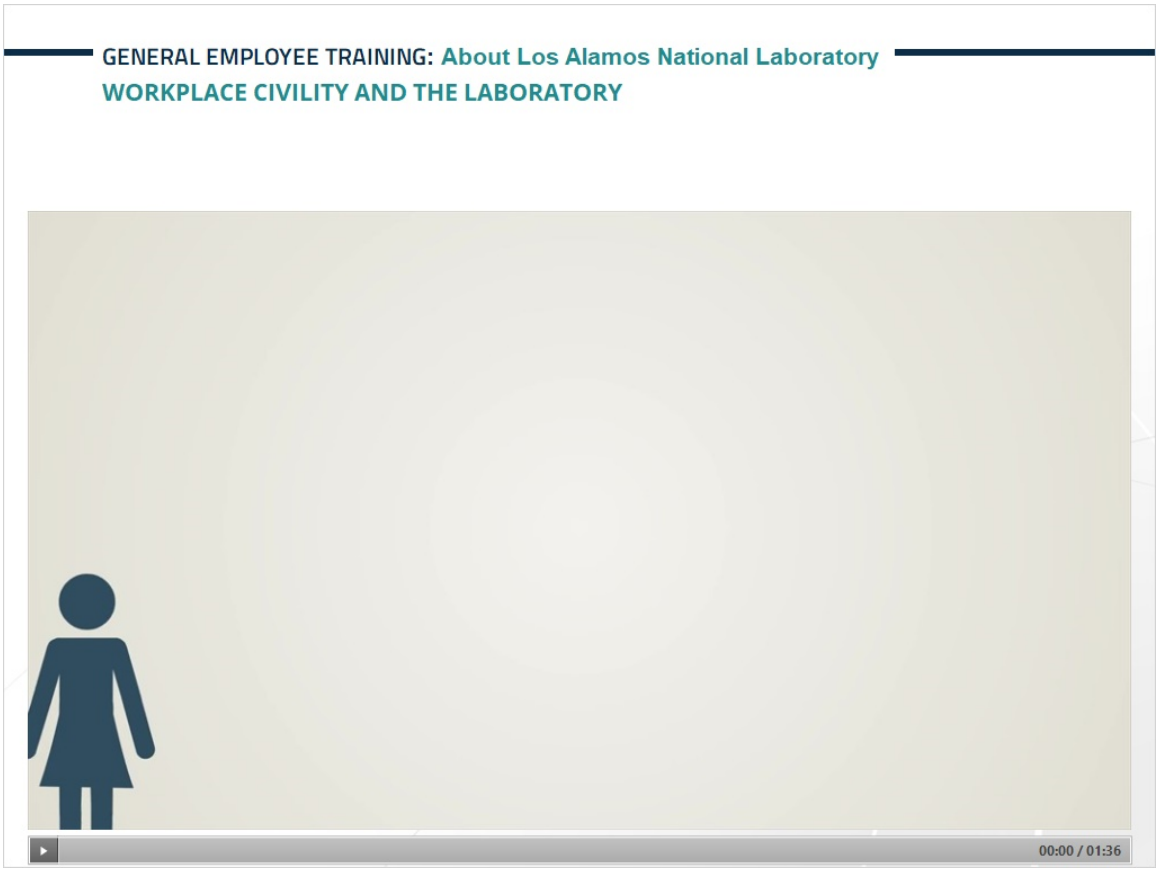


1.8 Laboratory Mission, Vision and Values

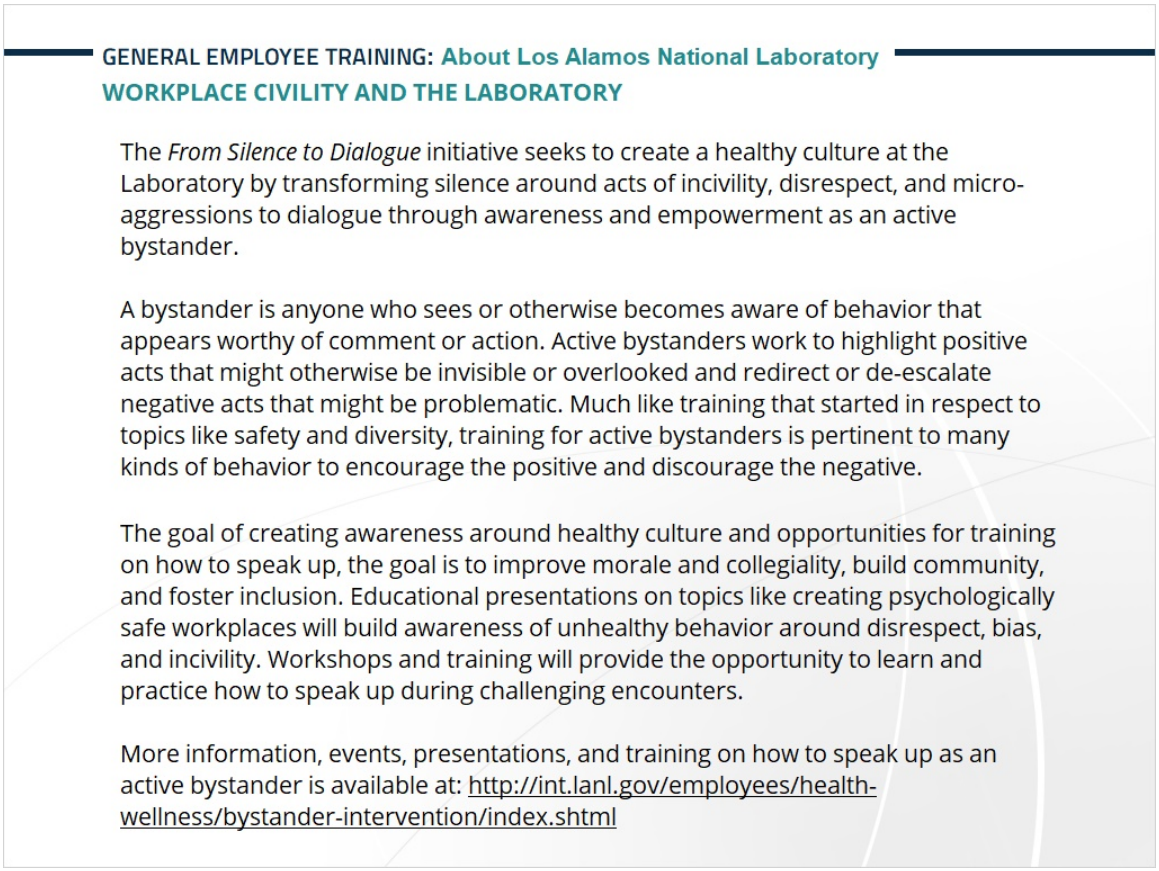
1.9 Workplace Civility



1.10 Incivility



1.11 Silence to Dialog



1.12 Environment

GENERAL EMPLOYEE TRAINING: About Los Alamos National Laboratory

IT'S YOUR ENVIRONMENT

Los Alamos National Laboratory is committed to an environmental management strategy aimed at reducing the Laboratory's environmental impacts, while still maintaining or increasing operating efficiencies.

Environmental Laws, Regulations, and Laboratory Requirements

Every LANL worker is responsible for protecting the environment. It is your responsibility to be well-acquainted with LANL environmental policies that pertain to your job function. These policies satisfy federal and state environmental laws and regulations. You will find the resources you need to perform your job in accordance with federal, state, and LANL environmental protection requirements by clicking the Environment link on the internal LANL homepage. As with any work performed at the Laboratory, remember that both the work and the worker need to be authorized.

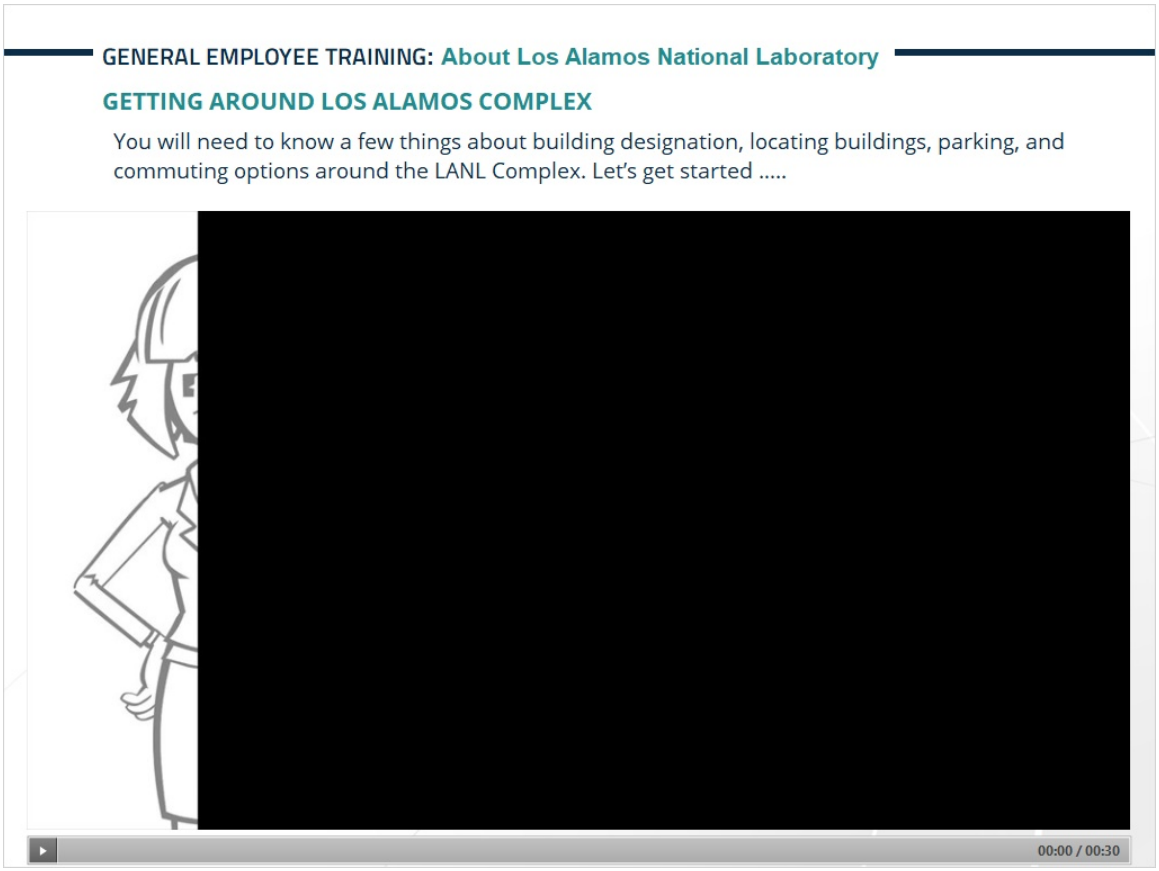
Consequences of Noncompliance

Not complying with laws and regulations can result in fines and program closures, as well as damage to human health and the environment. You can be held personally responsible for deliberately violating environmental protection.

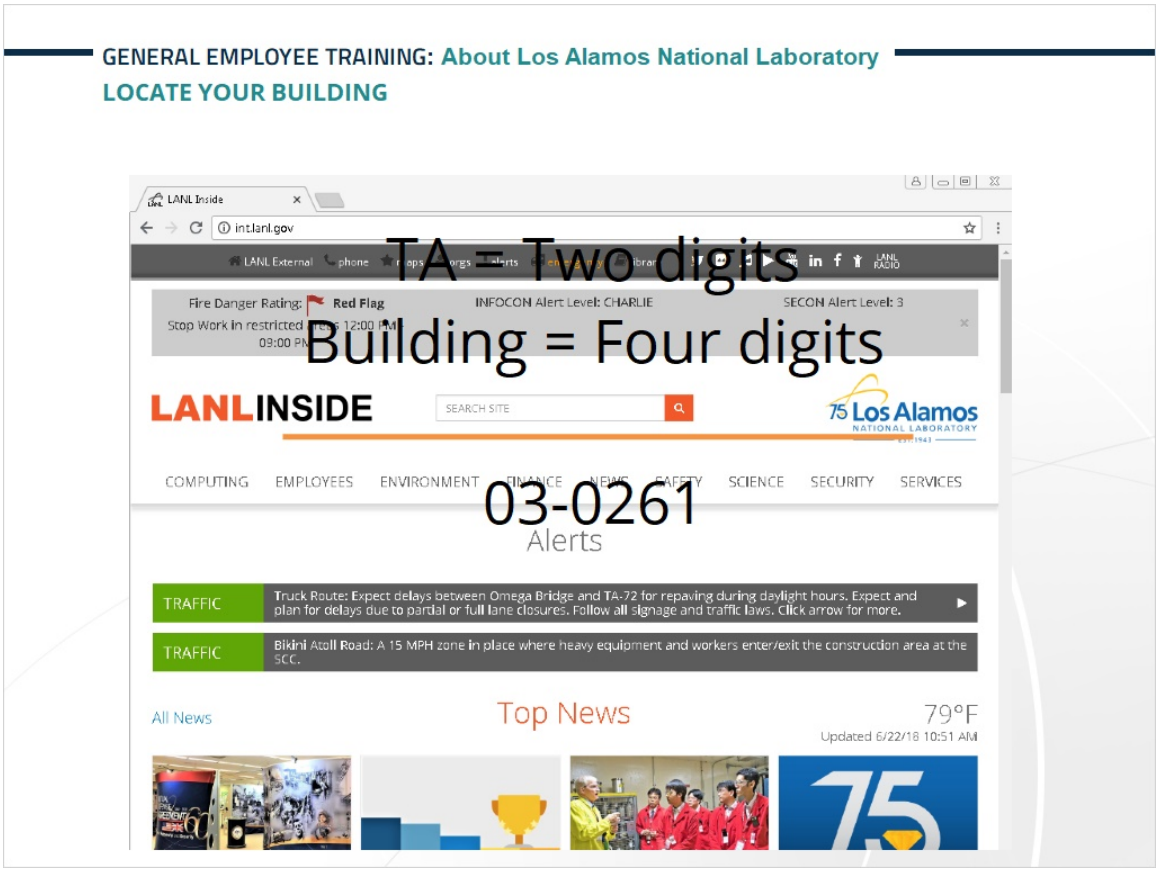
To learn more about LANL's environmental strategies visit ***EMS Environmental Awareness Training (32461).*** *https://extrain.lanl.gov/training/32461/page00.html*

The next slide contains audio, please make sure the volume is turned up.

1.13 Building Designations



1.14 Find your building

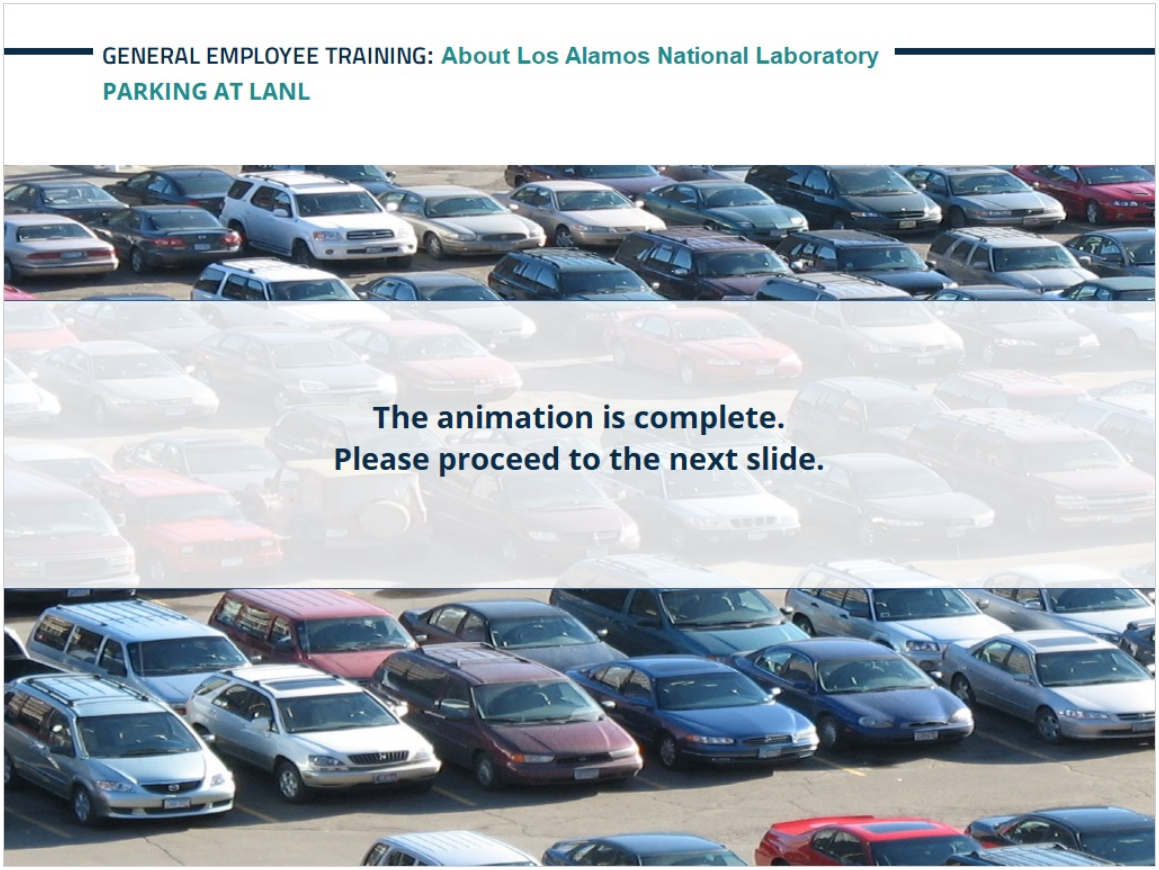


1.15 Parking limitations

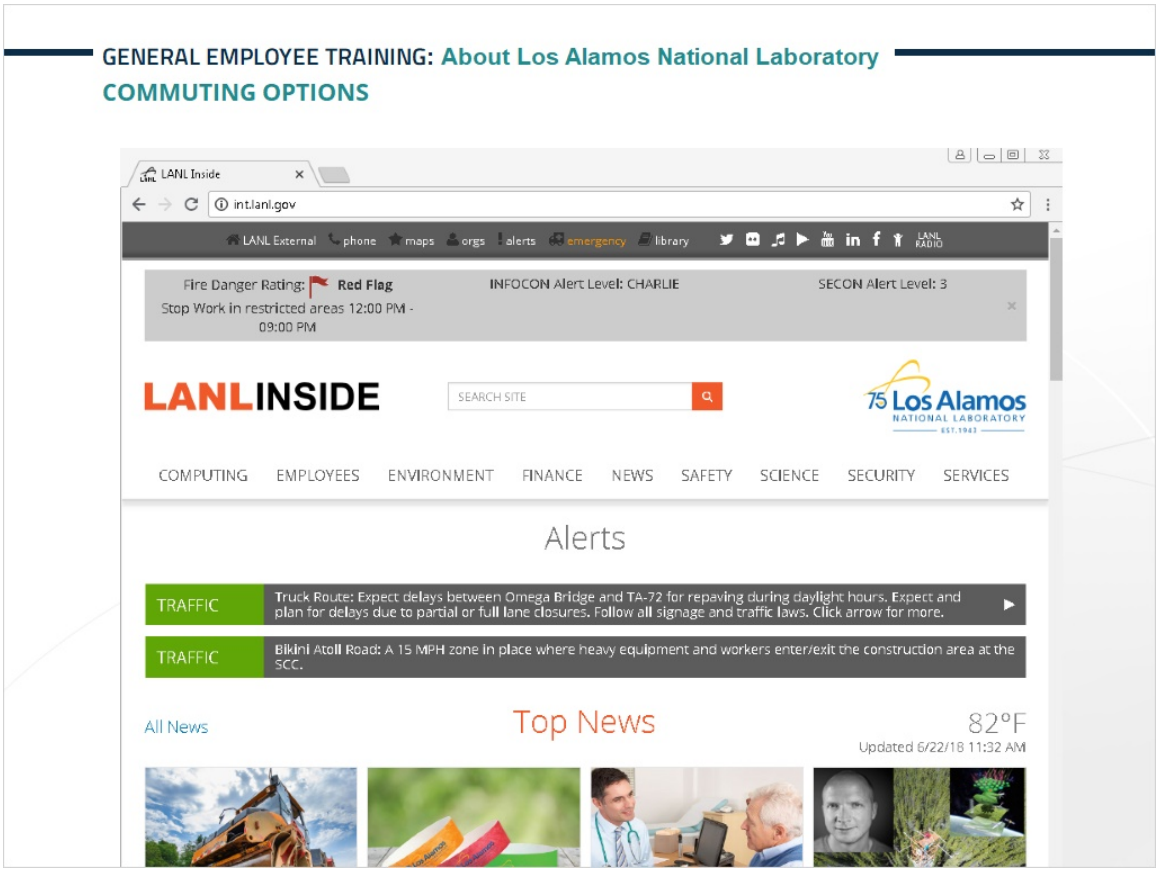
GENERAL EMPLOYEE TRAINING: About Los Alamos National Laboratory

PARKING AT LANL

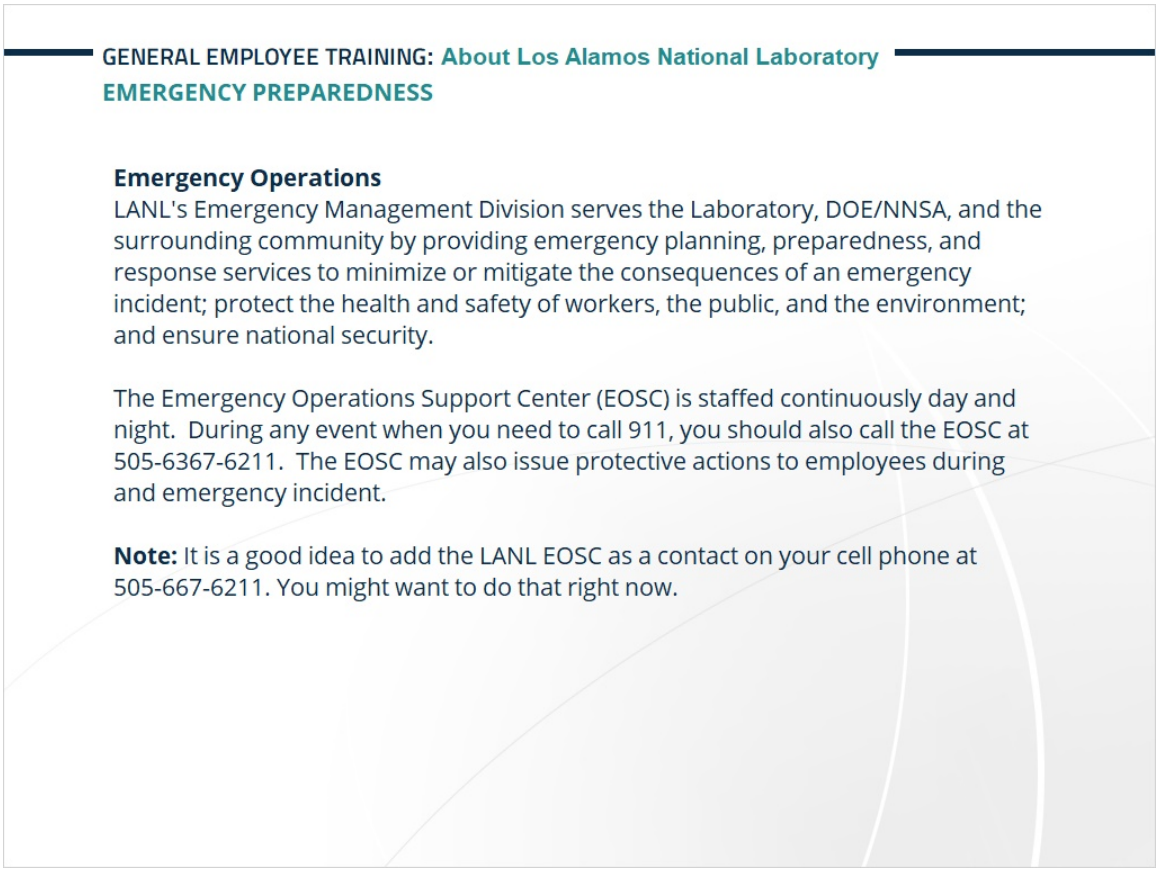
Untitled Layer 1 (Slide Layer)



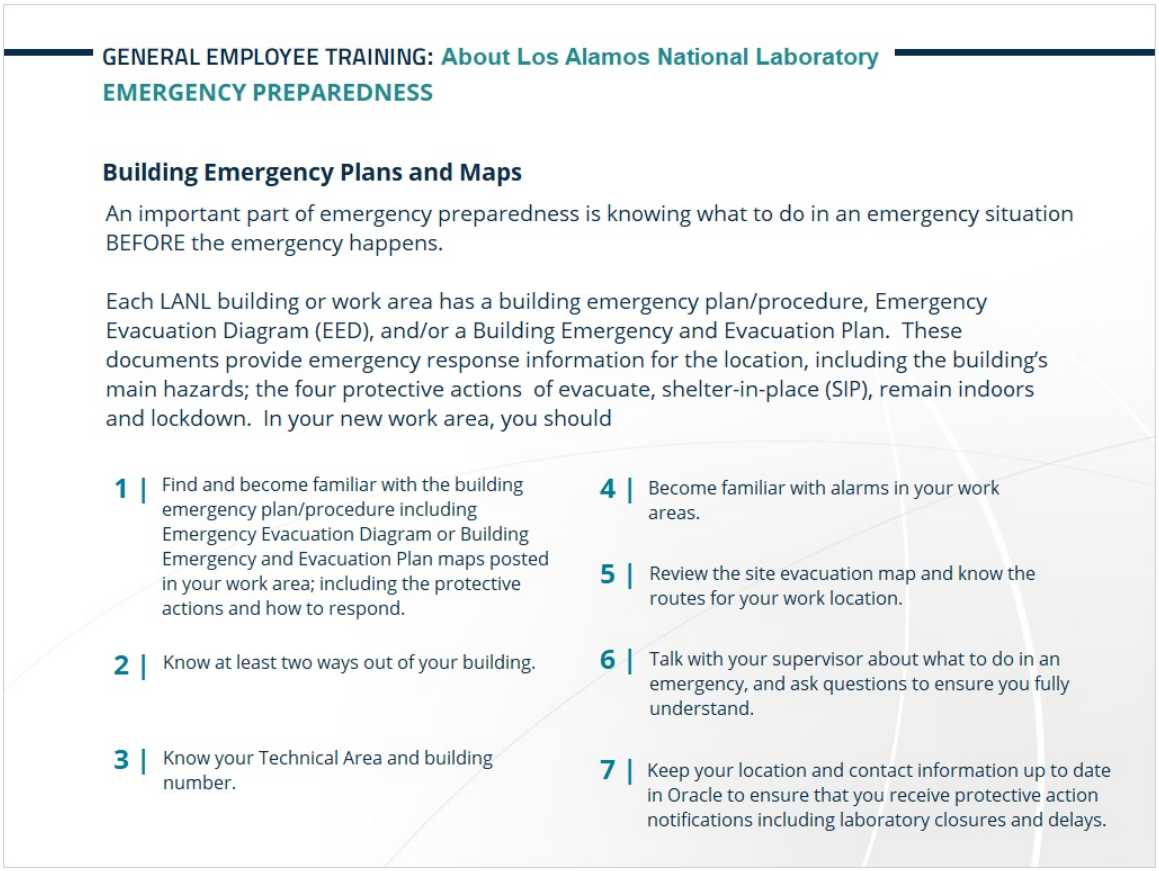
1.16 Commuting options



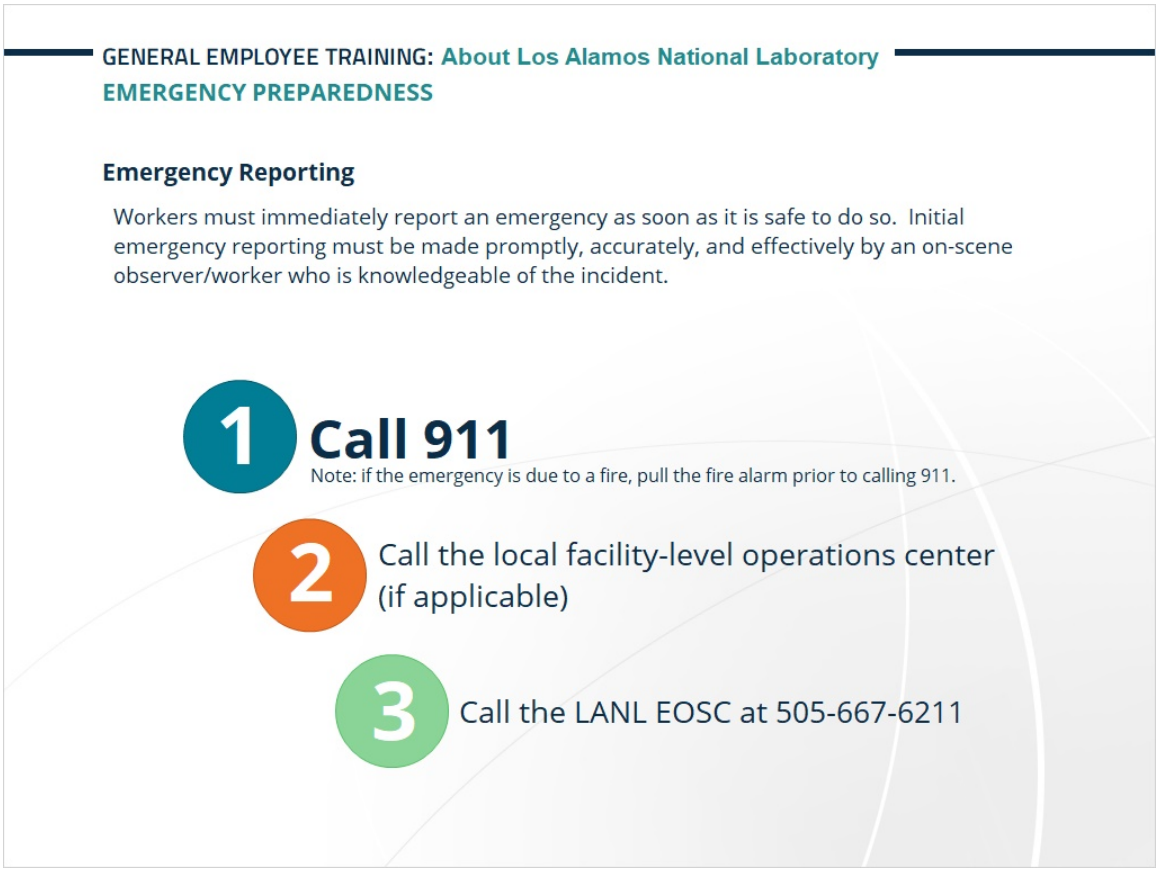
1.17 Emergency



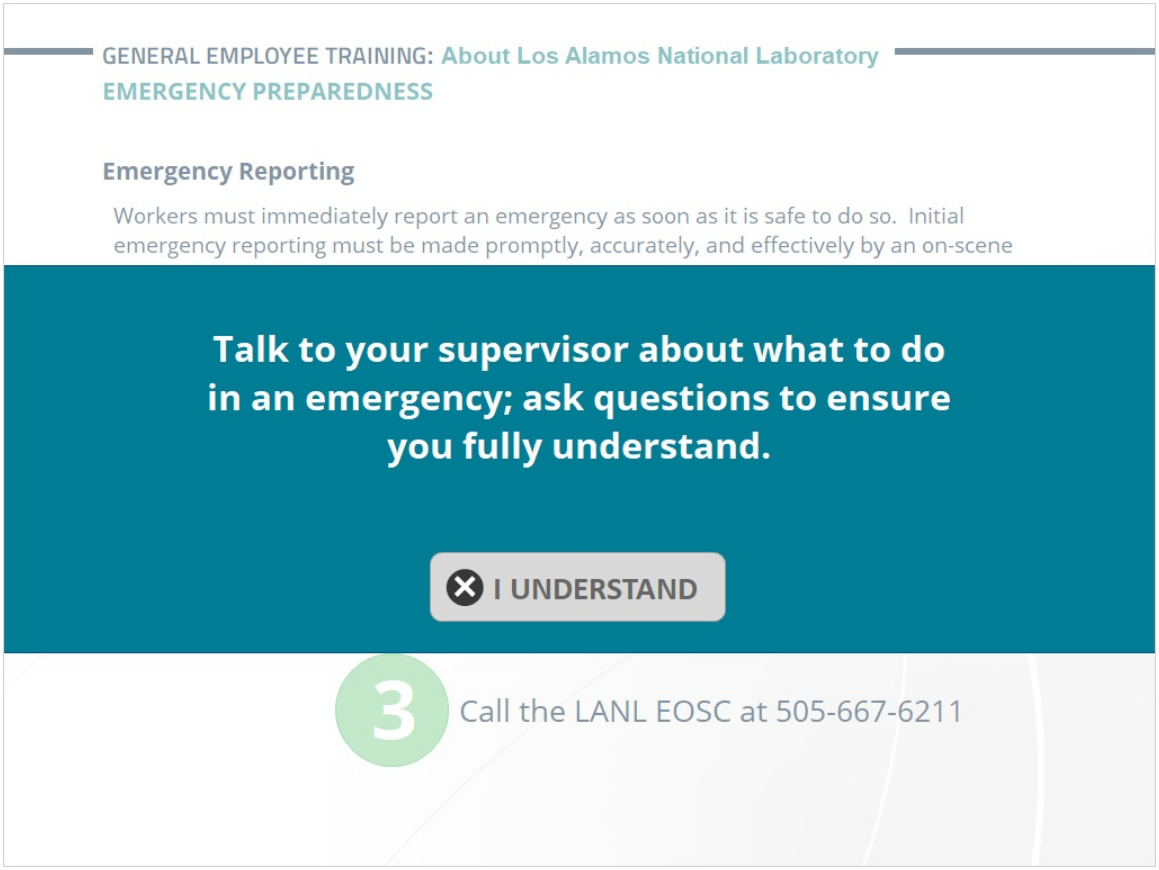
1.18 BEP Emergency



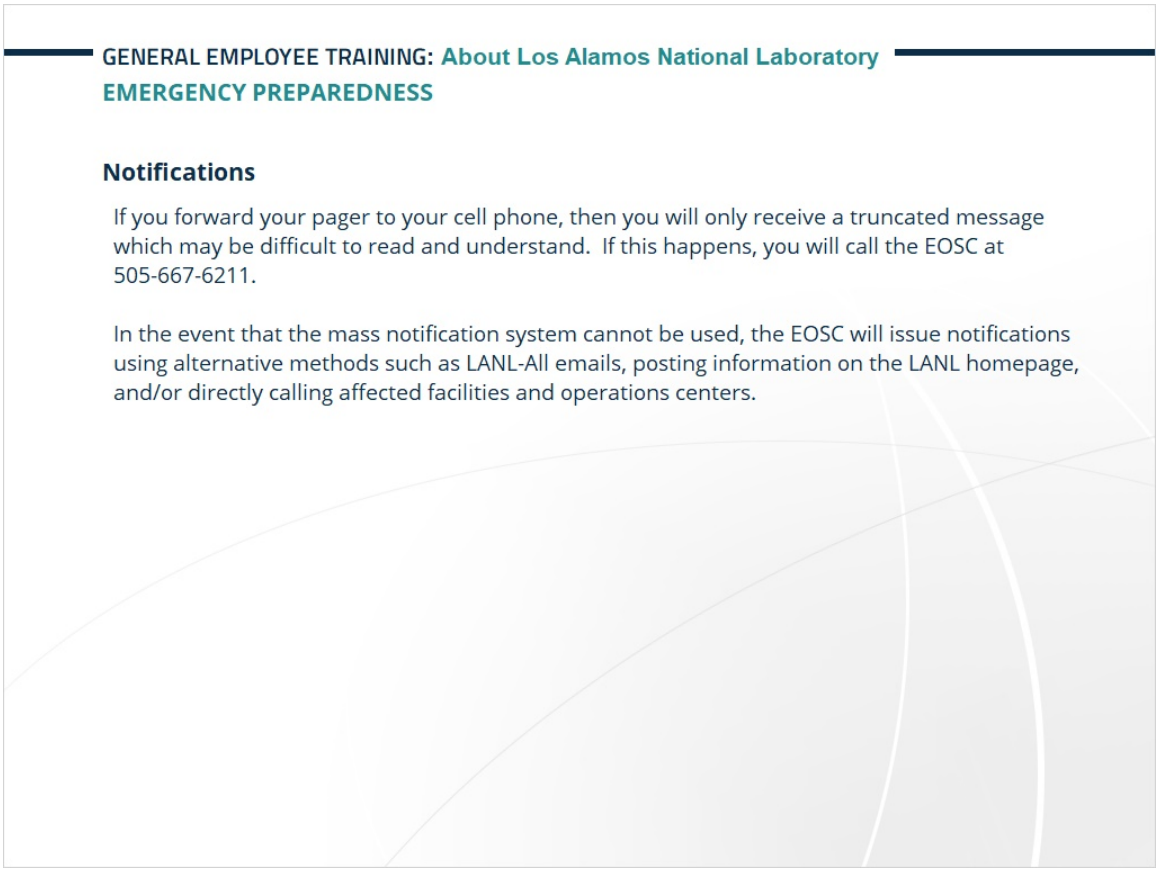
1.19 Evacuation



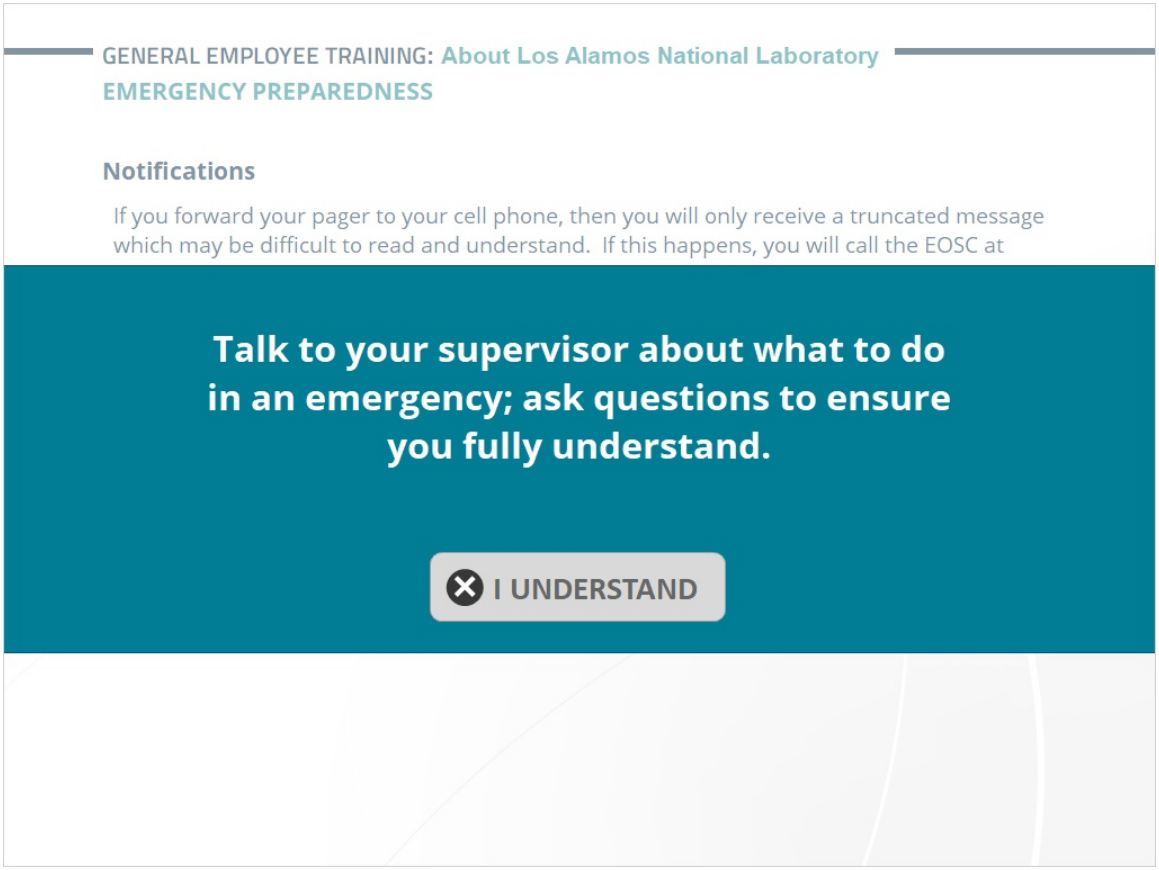
notice (Slide Layer)



1.20 Evacuation



notice (Slide Layer)



1.21 Protective actions

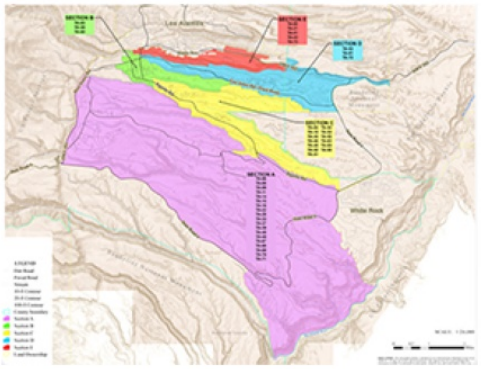
evacuate (Slide Layer)

EVACUATE

Building Evacuations

Building occupants may need to evacuate in the event of a chemical spill, fire, suspicious package/bomb threat, or other emergency. Once evacuated, personnel need to assemble at their designated assembly area for accountability. If necessary, alternate assembly areas will be identified when the building evacuation is issued and should be located uphill and upwind from the emergency event.

Notifications of additional protective actions and the release to return to your building will be announced at the assembly area by the assembly area leader.



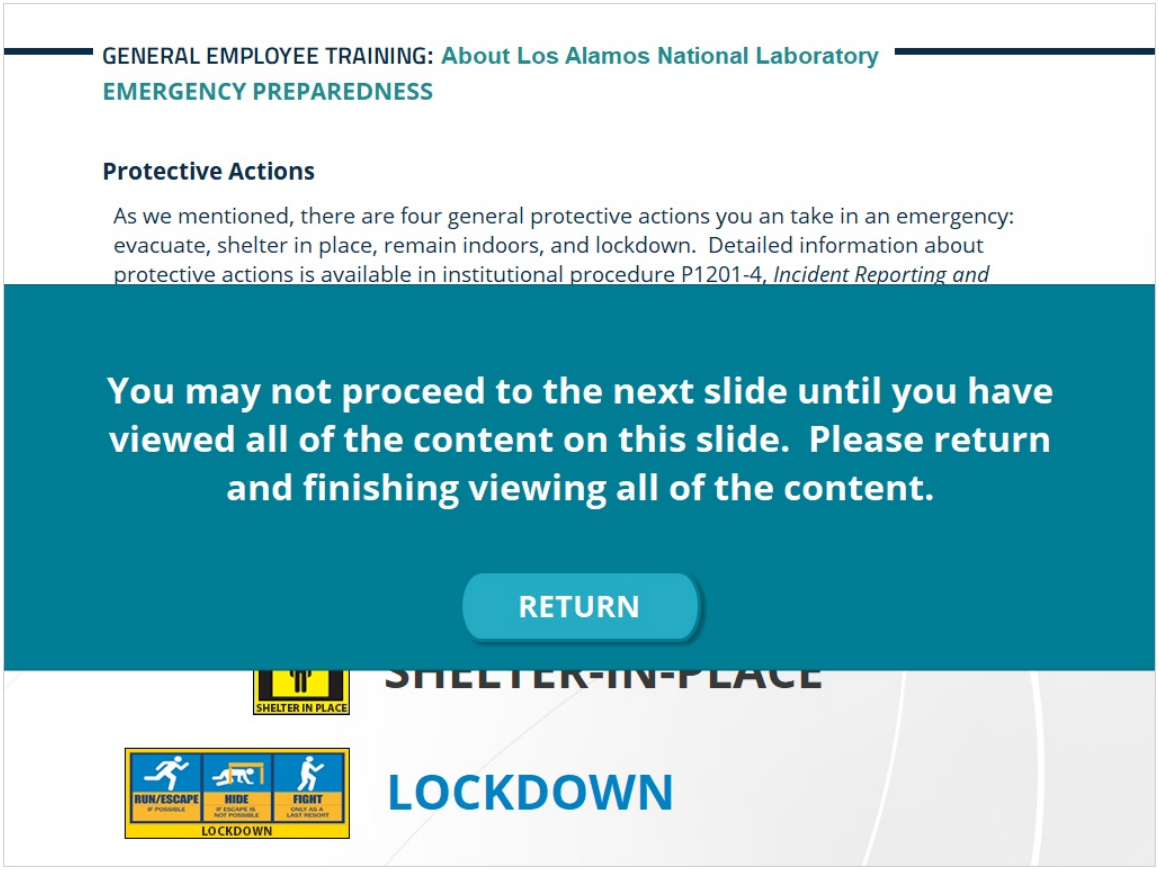
Site Evacuation

Depending on the type and urgency of the emergency, the decision may be made to evacuate the entire site or certain pre-identified sections using specific routes. Pre-determined site evacuation routes are used whenever possible.

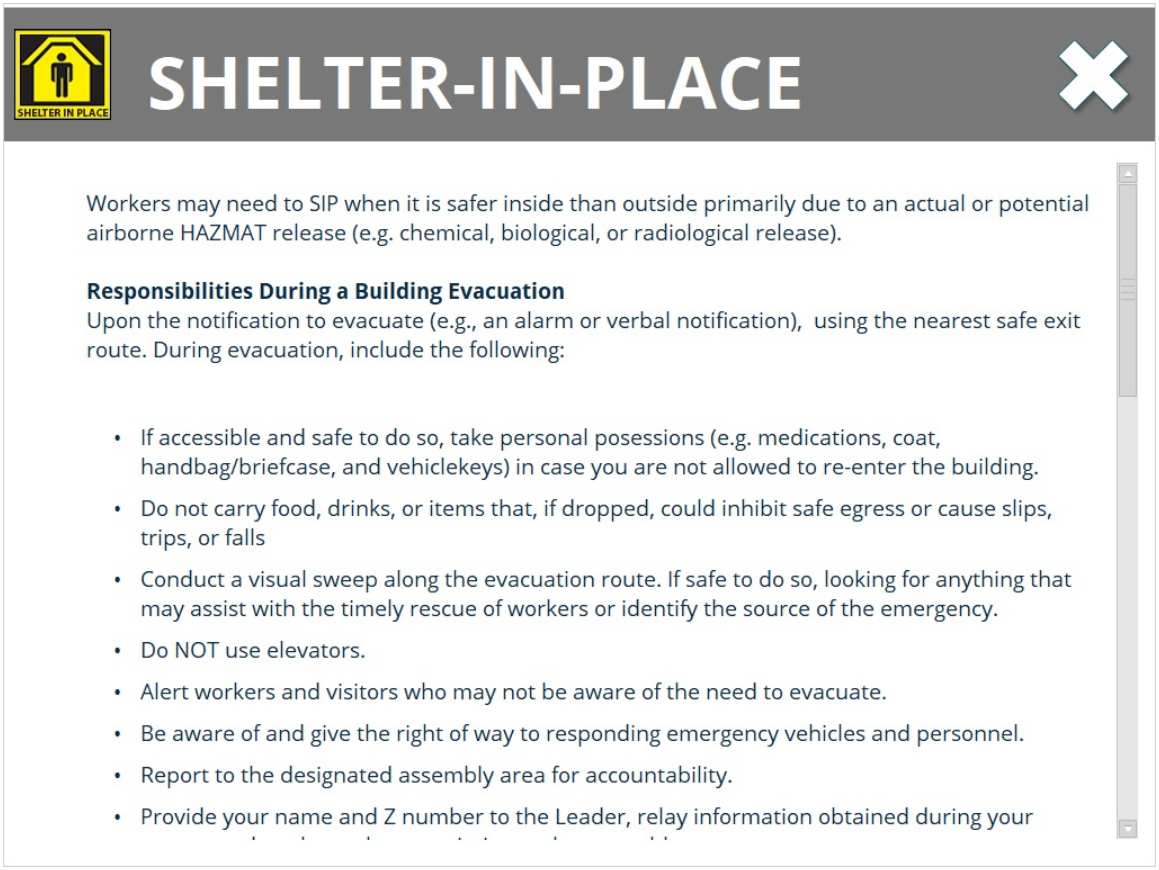
A site-wide evacuation may be communicated via the mass notification system and through site communications such as emails and information posted to the LANL homepage.

indoors (Slide Layer)

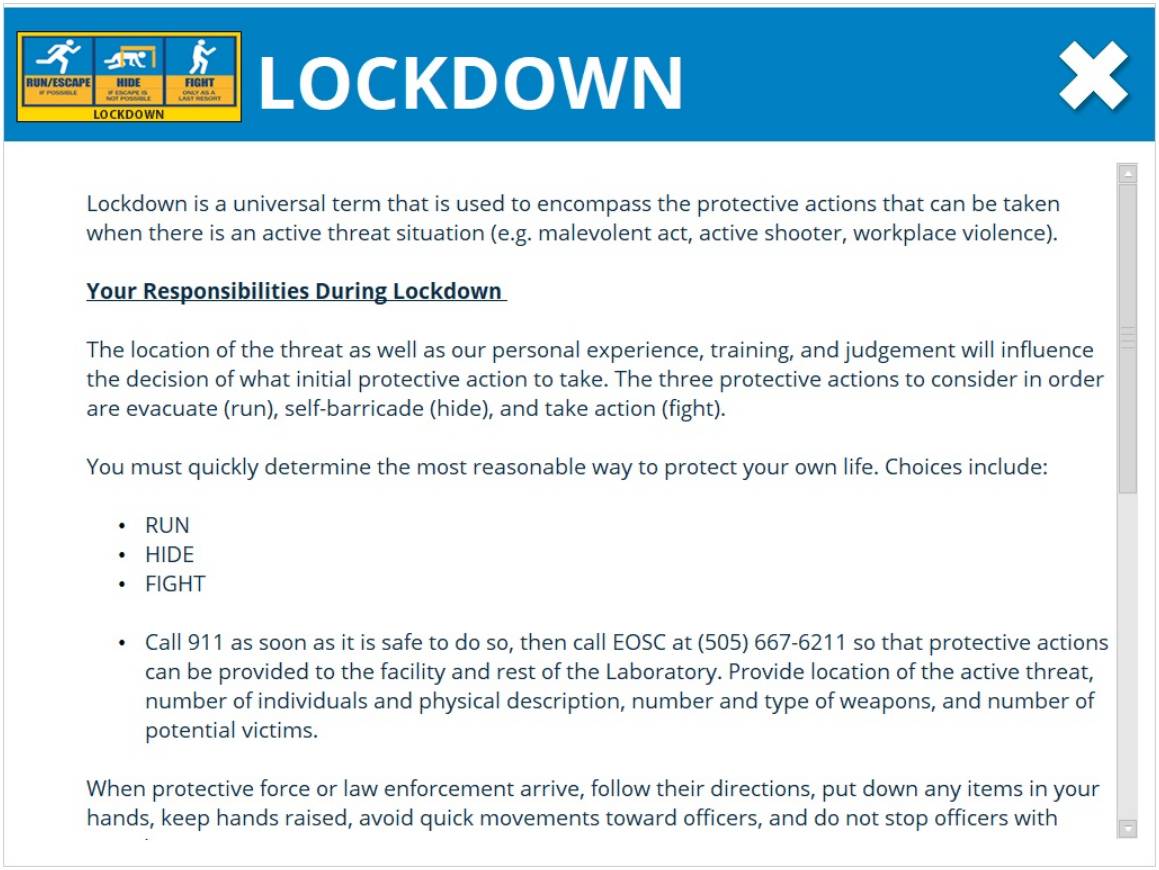
viewmore (Slide Layer)



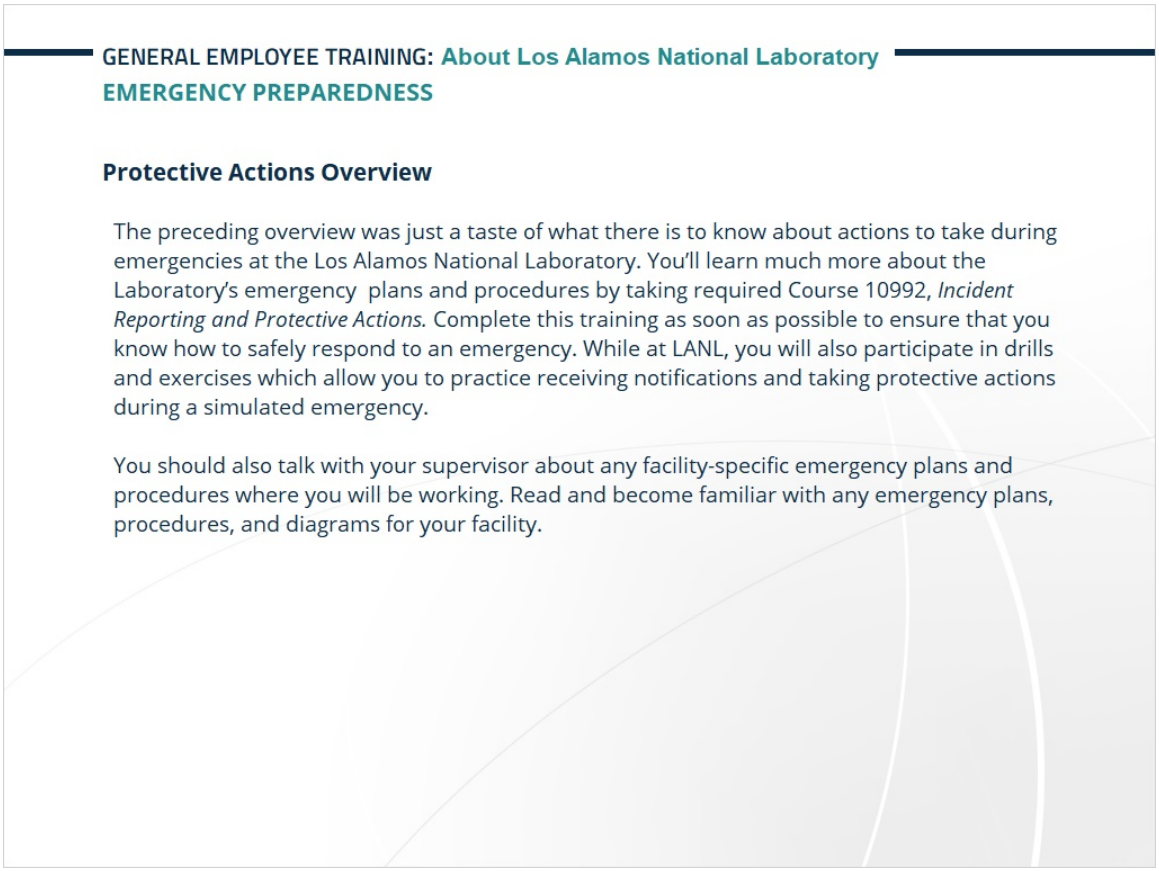
shelter (Slide Layer)



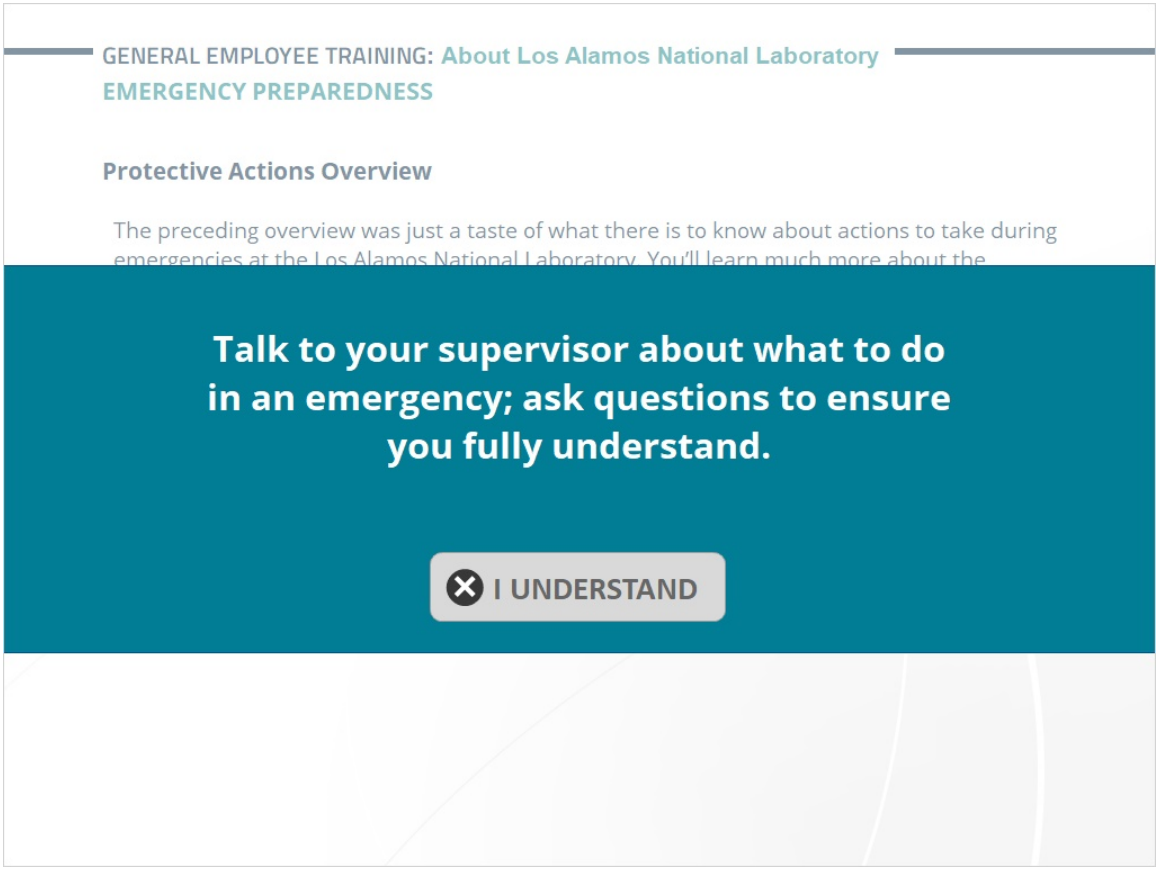
lockdown (Slide Layer)



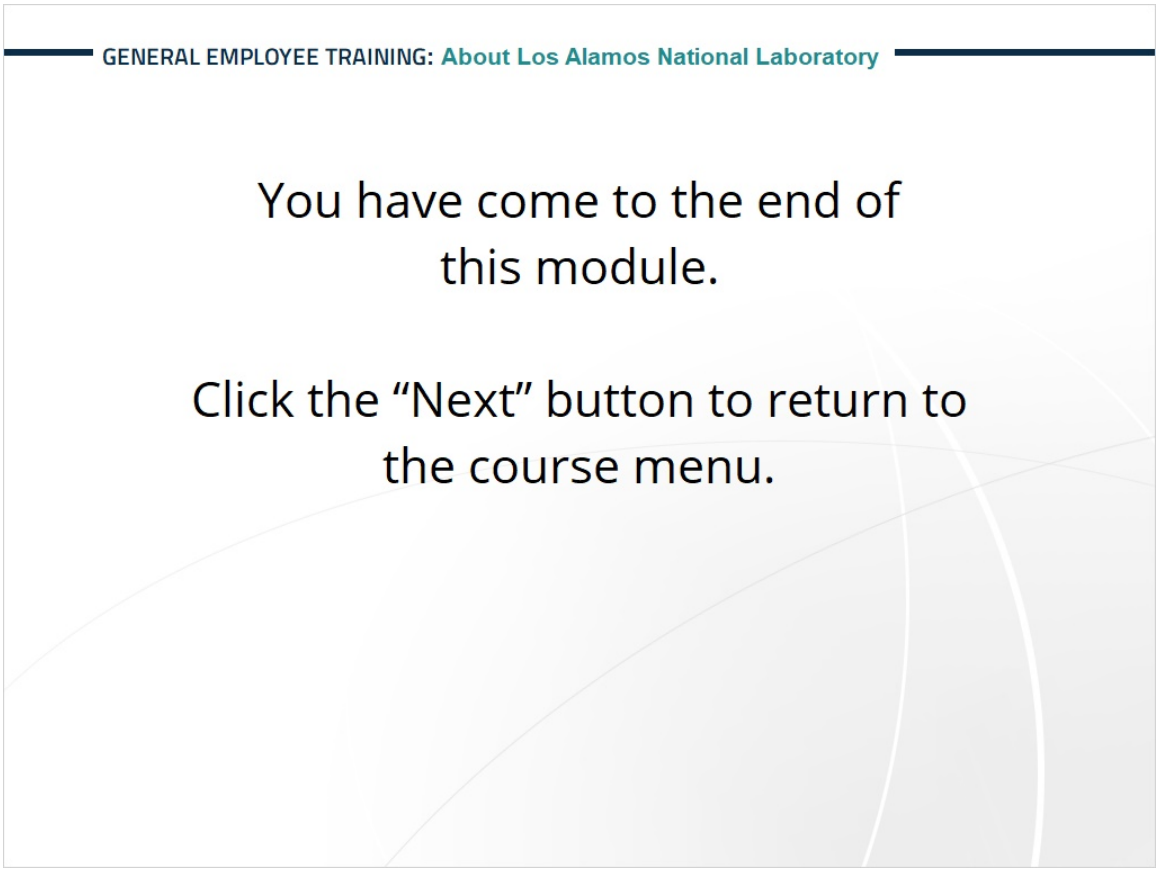
1.22 Learn More



notice (Slide Layer)

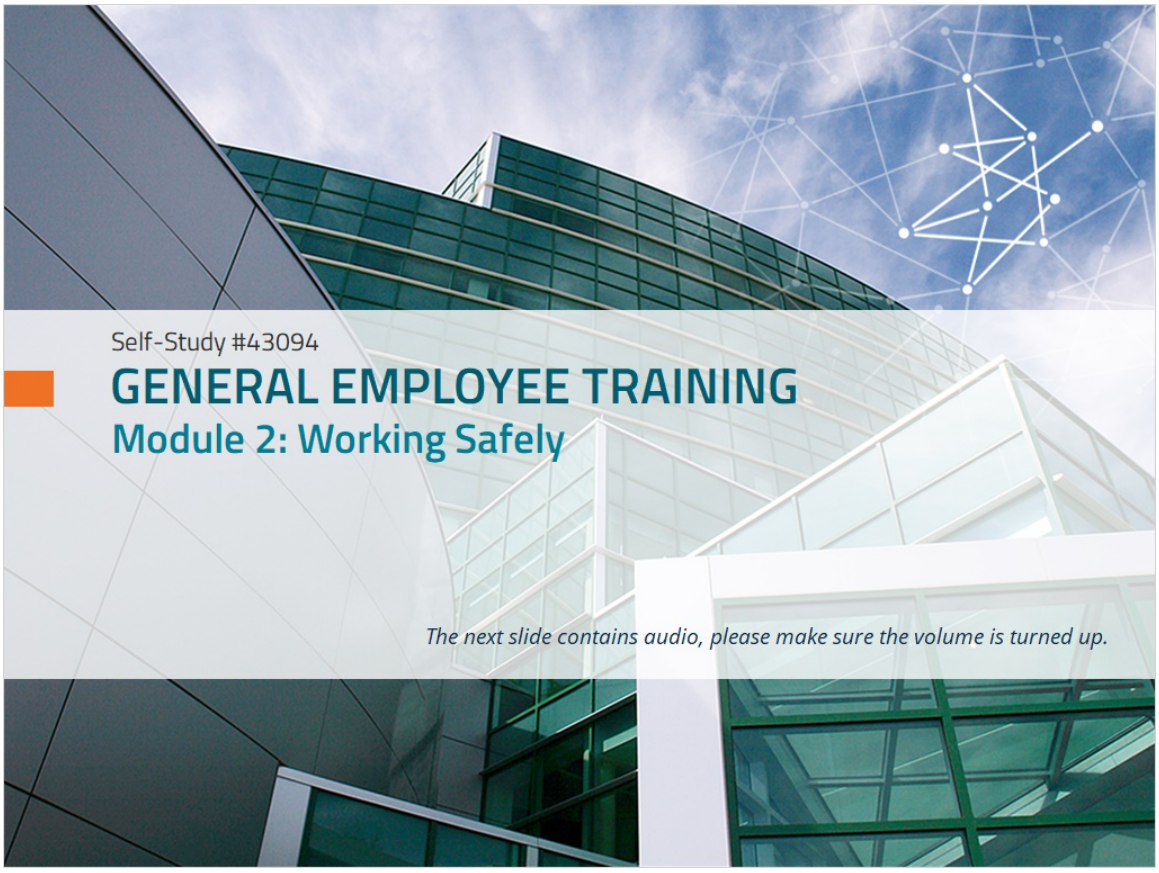


1.23 What Lies Ahead

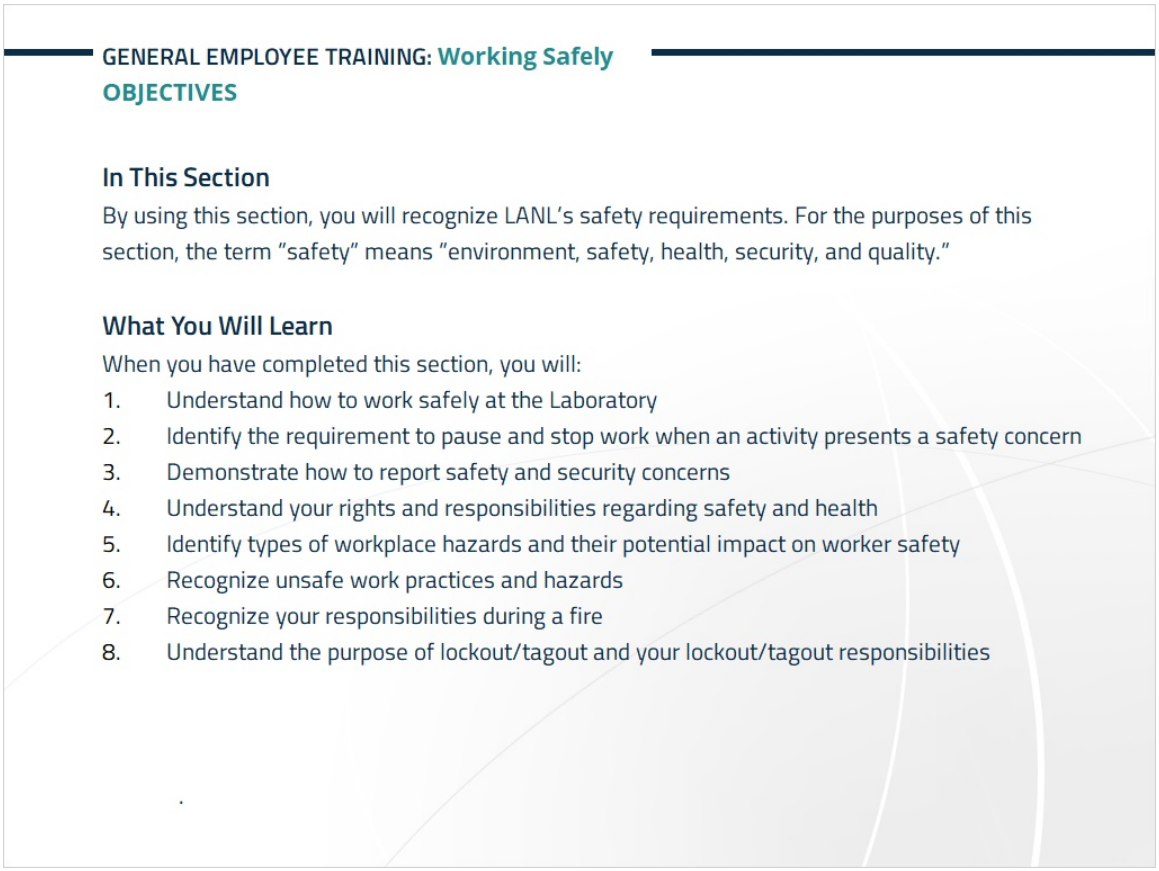


2. Work Safely

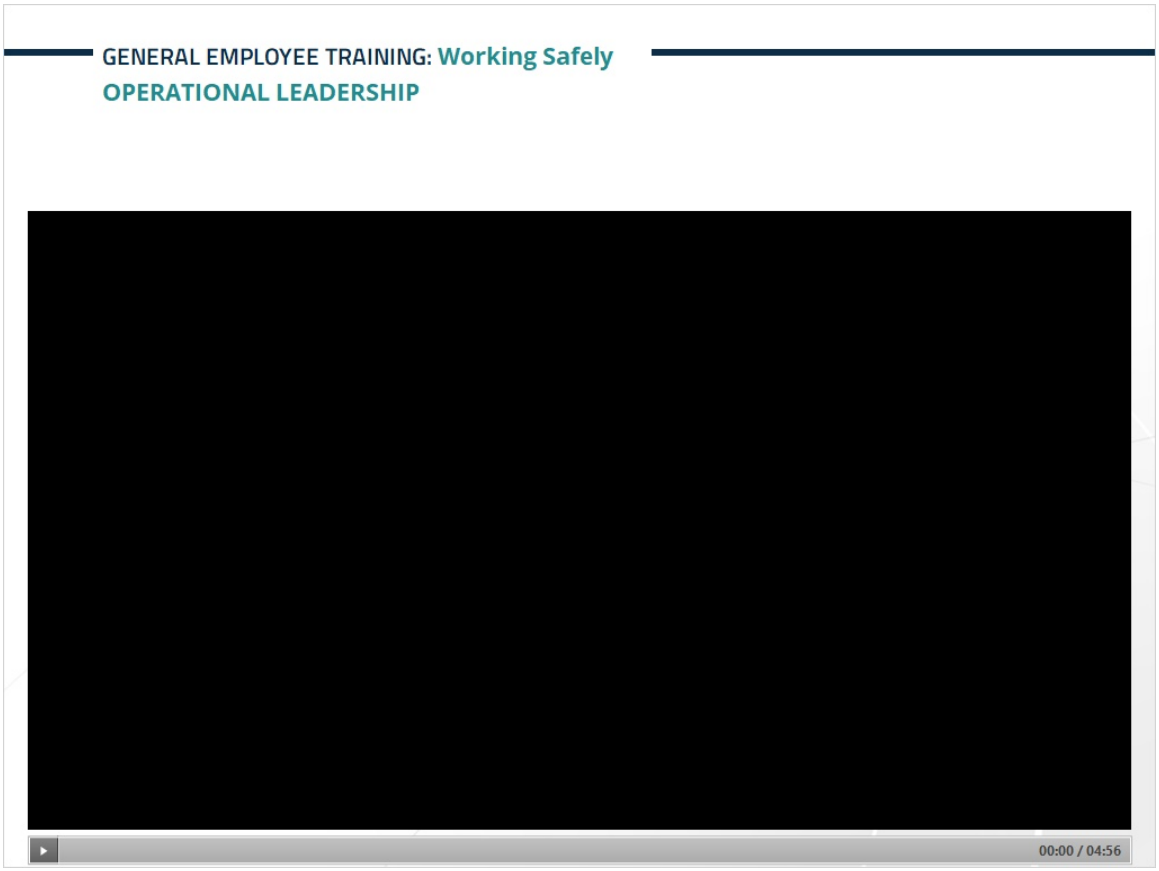
2.1 GENERAL EMPLOYEE TRAINING



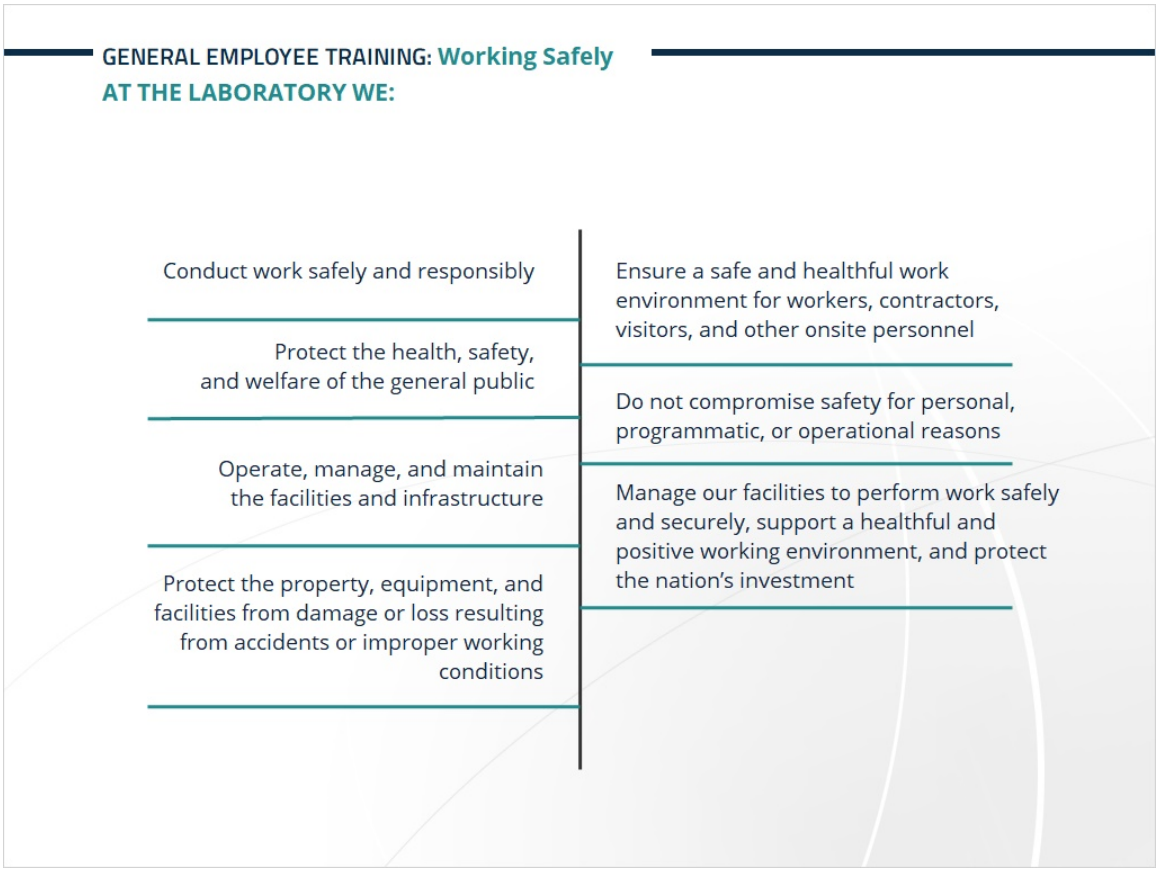
2.2 Objectives



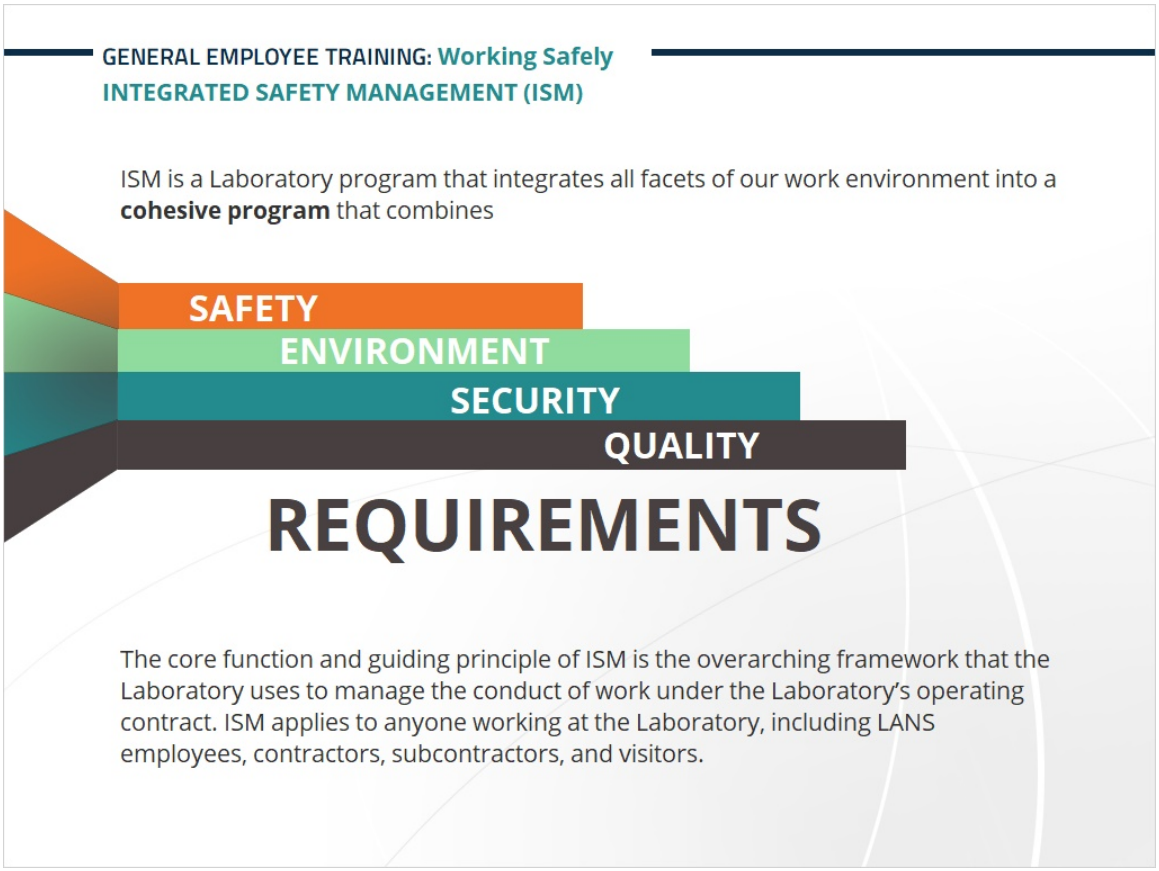
2.3 Safety Policies and Values



2.4 Safety Policies and Values



2.5 ISM


GENERAL EMPLOYEE TRAINING: Working Safely
INTEGRATED SAFETY MANAGEMENT (ISM)
ISM is a Laboratory program that integrates all facets of our work environment into a cohesive program that combines
SAFETY
ENVIRONMENT
SECURITY
QUALITY
REQUIREMENTS
The core function and guiding principle of ISM is the overarching framework that the Laboratory uses to manage the conduct of work under the Laboratory's operating contract. ISM applies to anyone working at the Laboratory, including LANS employees, contractors, subcontractors, and visitors.

2.6 ISM Program

GENERAL EMPLOYEE TRAINING: **Working Safely**

INTEGRATED SAFETY MANAGEMENT

The ISM Program describes the specific work activities that must be accomplished and is organized around the following five core functions:

Define (Slide Layer)

Analyze (Slide Layer)

Develop (Slide Layer)

Perform (Slide Layer)

Ensure (Slide Layer)

2.7 Work Management

GENERAL EMPLOYEE TRAINING: **Working Safely**
LABORATORY-WIDE SAFETY REQUIREMENTS

All work, programmatic and non-programmatic, within any facility falls within a work management process that considers hazards and safety and security requirements. For your own safety and that of others, make sure you are familiar with work processes within your facility.

FOR EXAMPLE:

If a circuit breaker trips, do not reset it yourself unless you are a qualified electrician. You must report it to your building manager or facility coordinator.

2.8 Policy Page

GENERAL EMPLOYEE TRAINING: **Working Safely**
LABORATORY-WIDE SAFETY REQUIREMENTS

Safety requirements are established for the entire Laboratory, for each facility, and for all work activities. To guide you in the process, a series of functional documents and local instructions define processes, operations, or other information needed to perform certain work.

Laboratory-wide safety requirements are found in institutional documents, which include system descriptions, program descriptions, and procedures.

This video contains audio, please make sure the volume is turned up.

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GENERAL EMPLOYEE TRAINING: **Working Safely**

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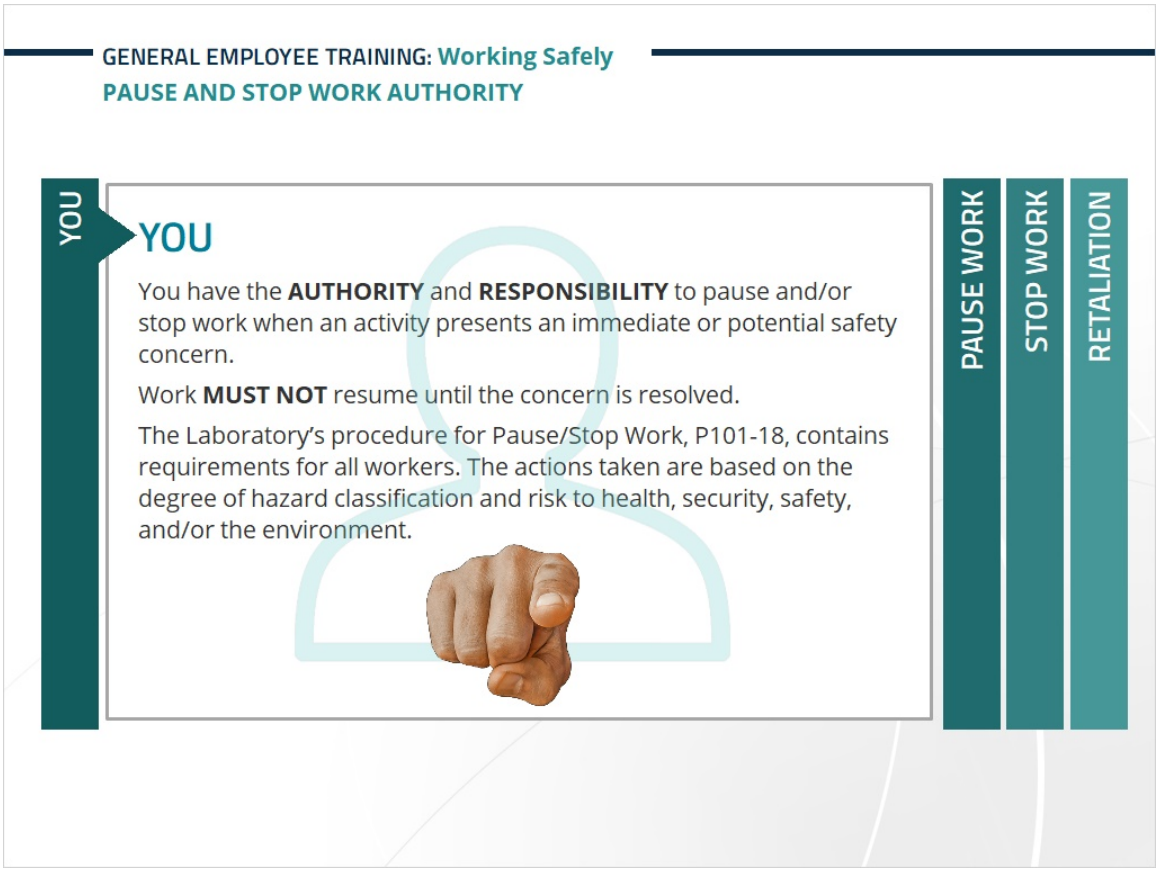
2.9 Responsibilities

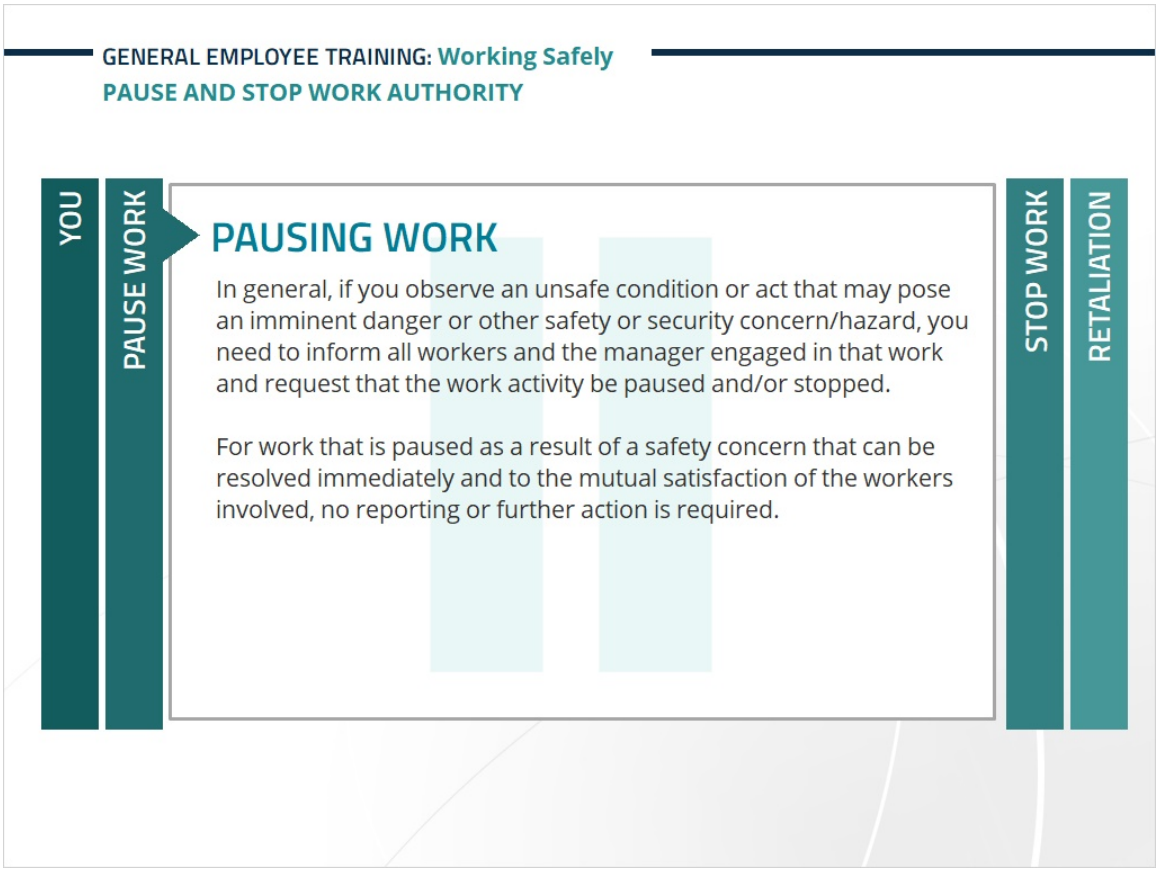
workers (Slide Layer)

managers (Slide Layer)

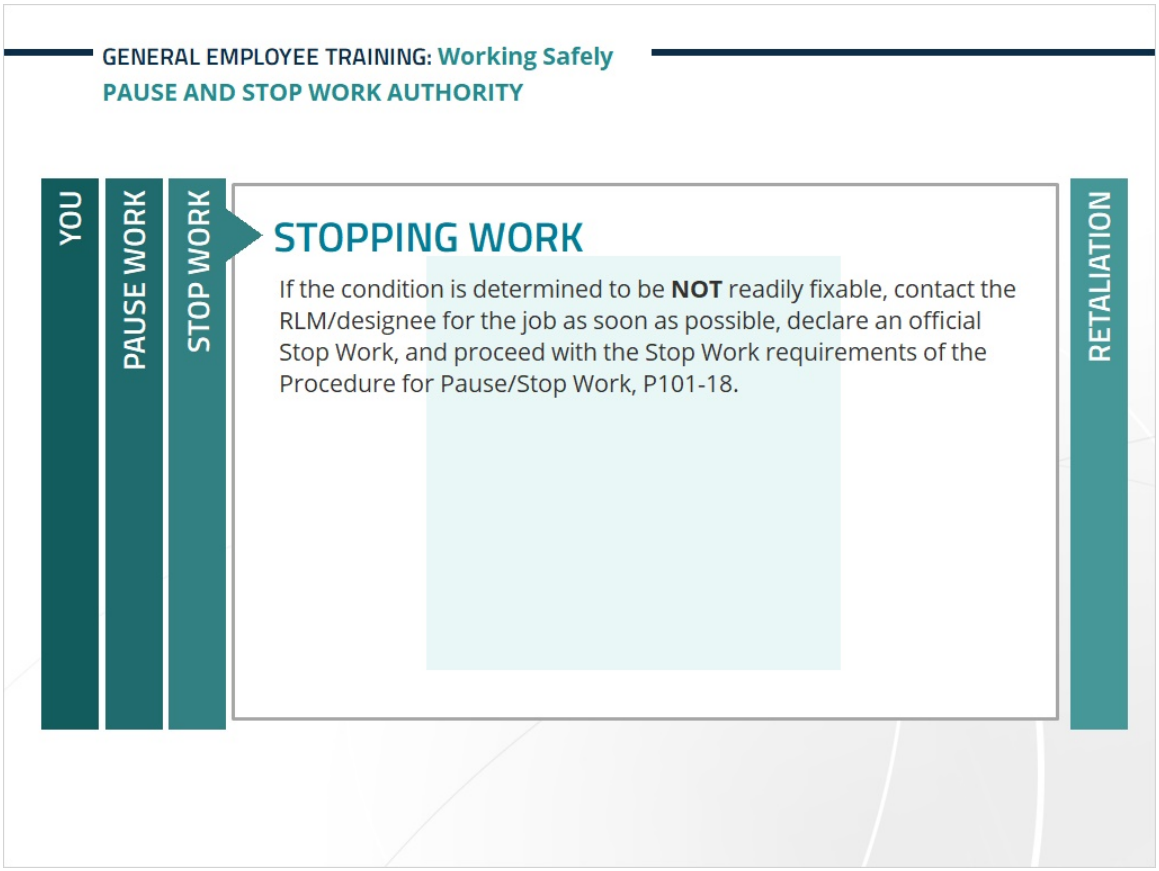
2.10 Pause and Stop



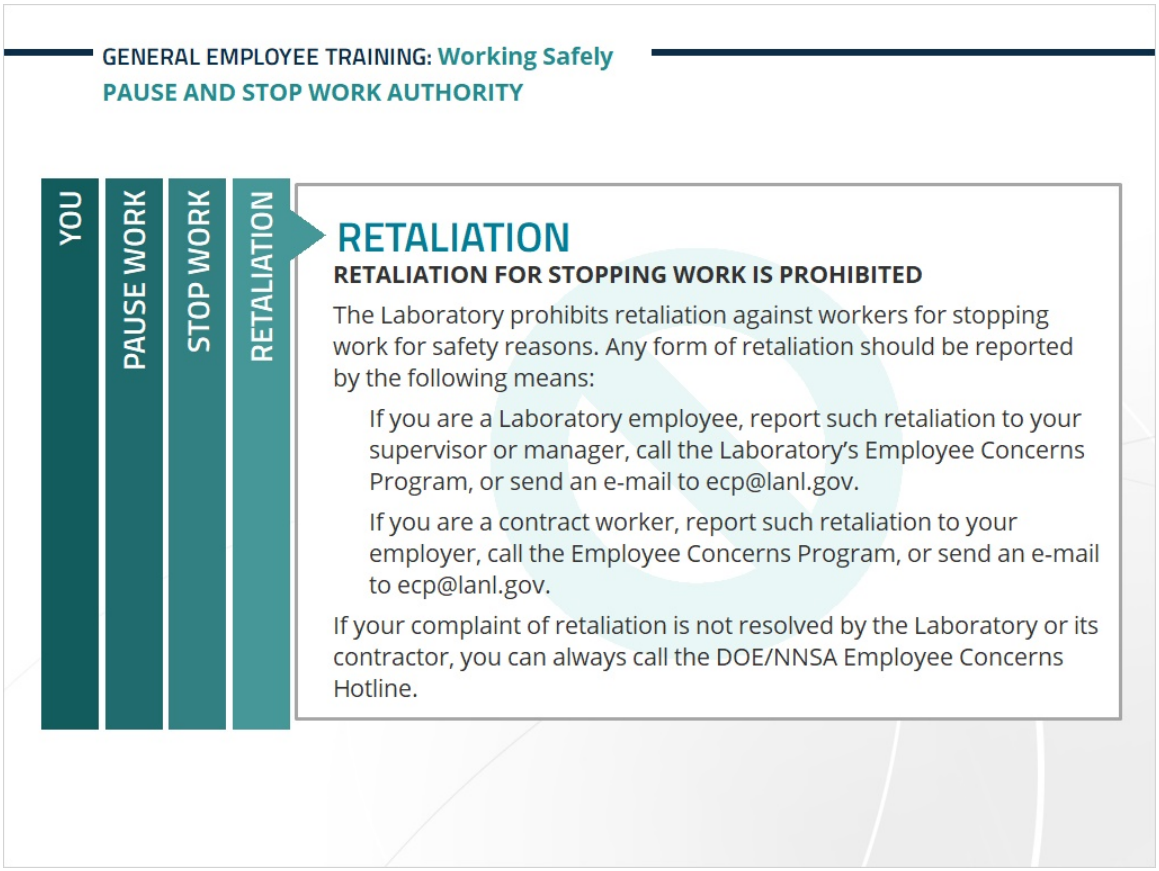
2.11 Pause and Stop



2.12 Pause and Stop

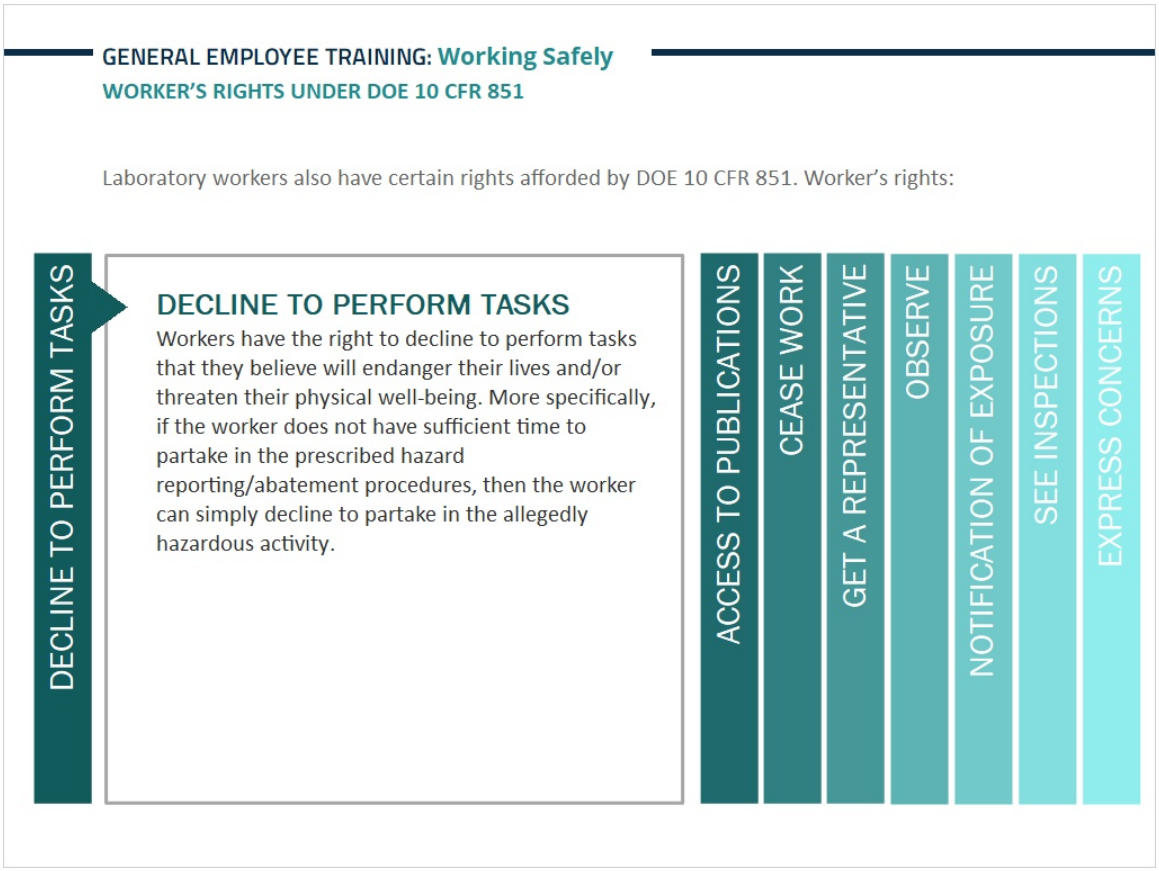


2.13 Pause and Stop



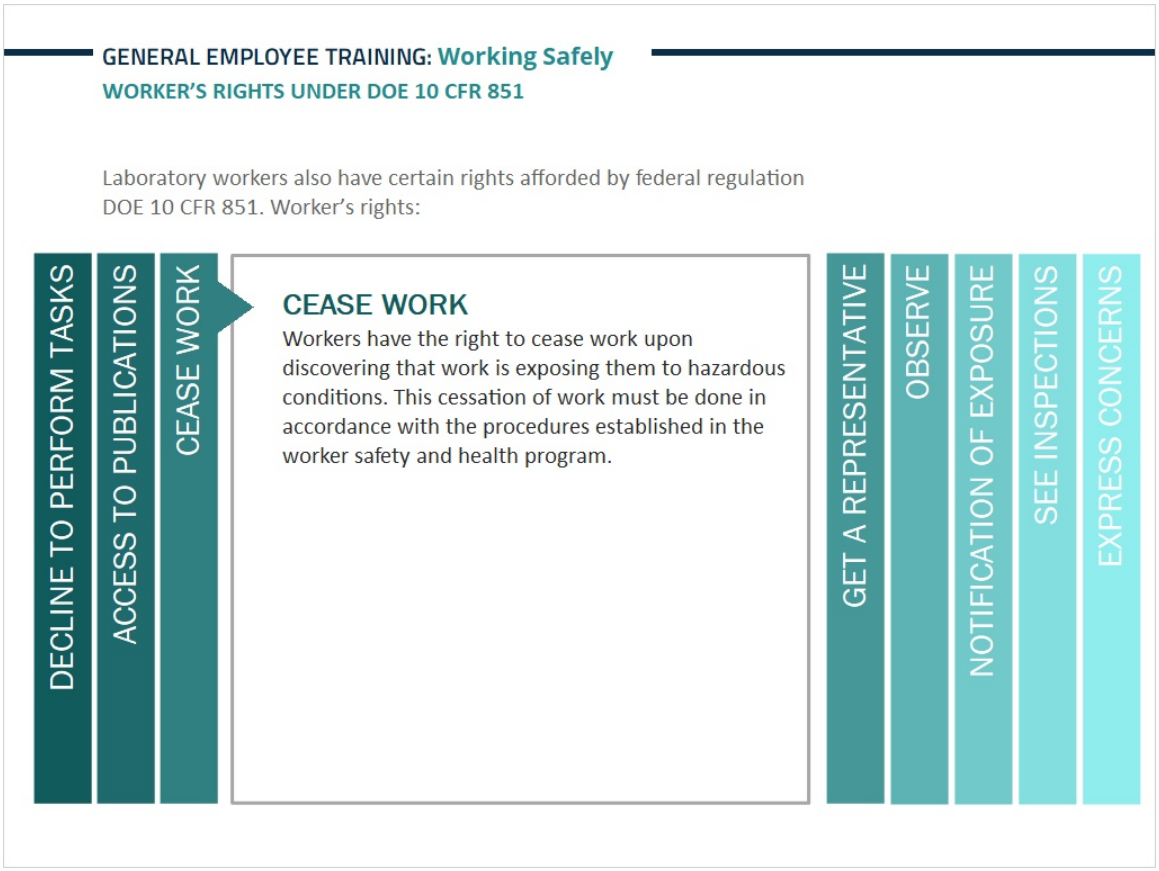
2.14 Reporting

2.15 Workers' Rights

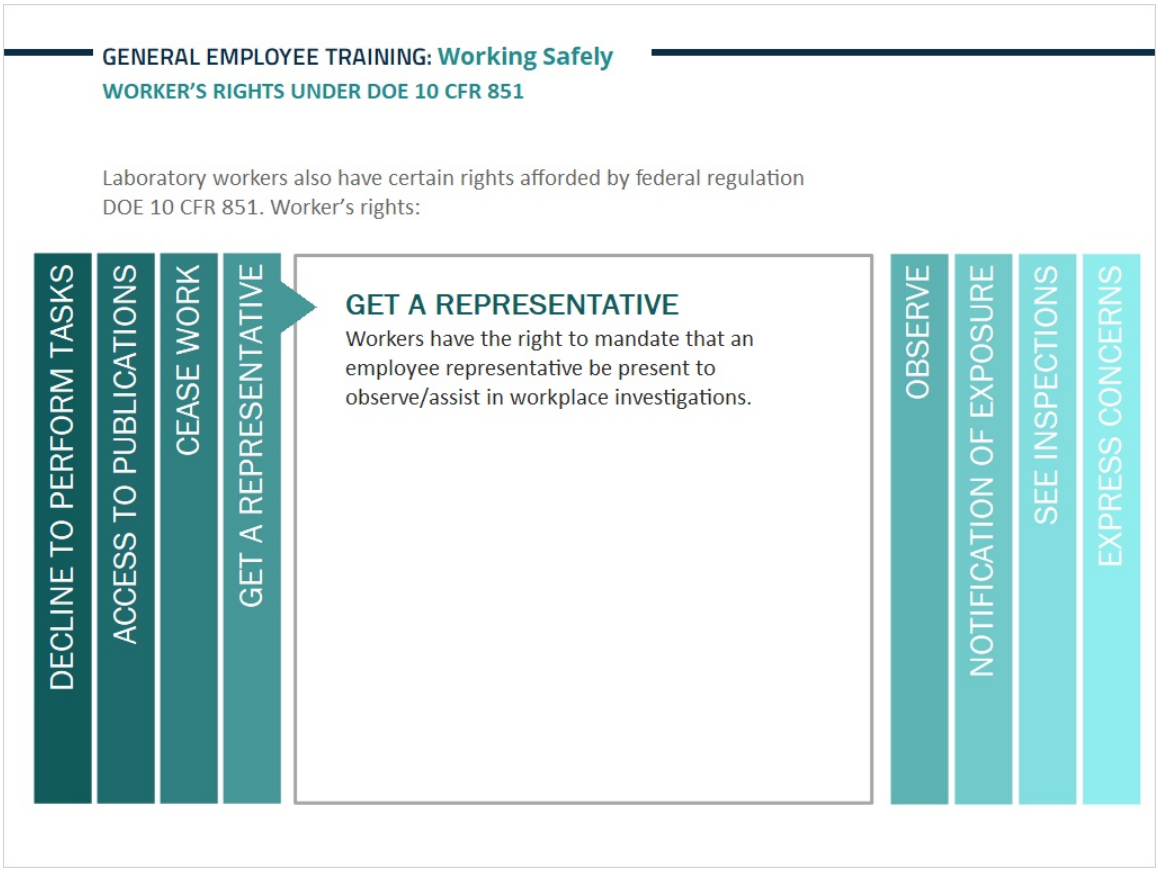


2.16 Workers' Rights

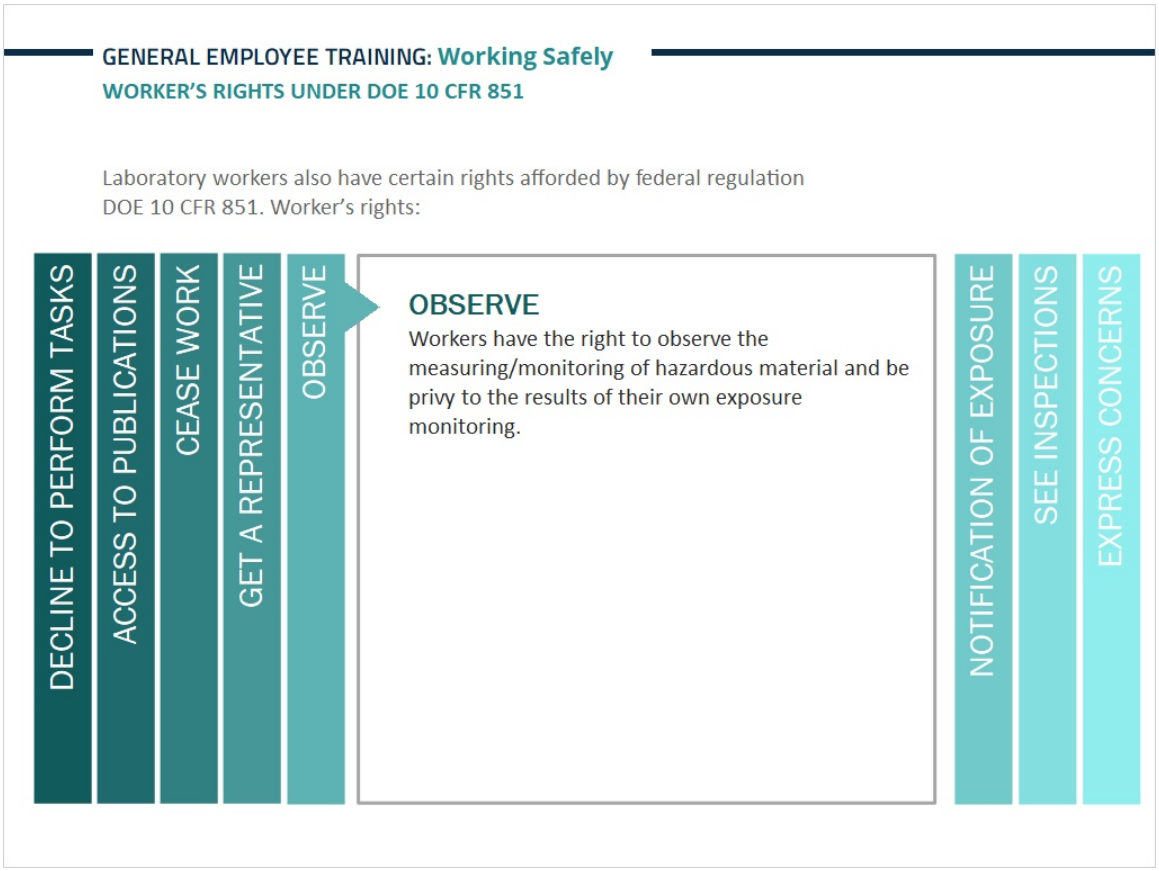
2.17 Workers' Rights



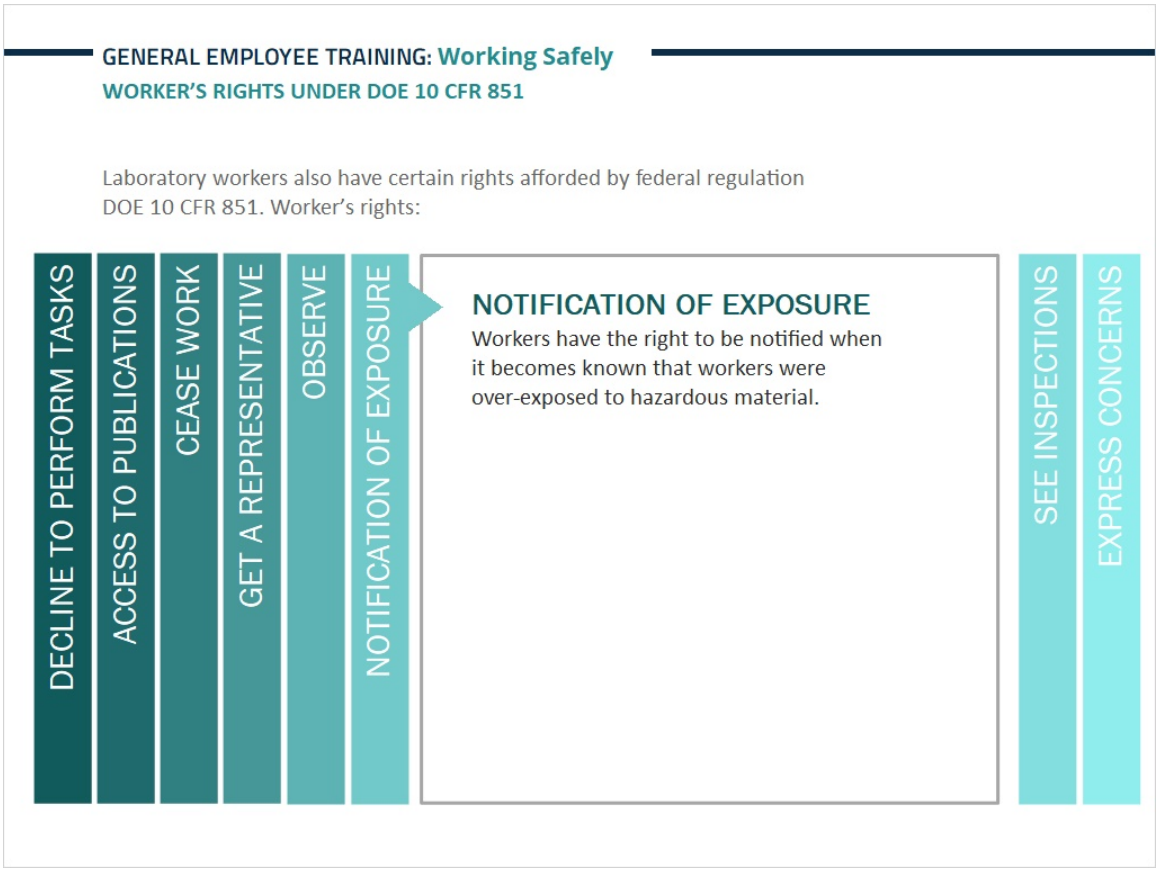
2.18 Workers' Rights



2.19 Workers' Rights



2.20 Workers' Rights



2.21 Workers' Rights

2.22 Workers' Rights

2.23 Workers' Responsibilities

GENERAL EMPLOYEE TRAINING: **Working Safely**

WORKERS' RESPONSIBILITIES

Workers also have responsibilities to comply with all mandates listed in the Laboratory's worker safety and health program. As a Laboratory worker, you must

(find the five worker responsibilities by hovering your mouse over each element)

1. Report hazardous conditions to your supervisor promptly
2. Perform all work safely
3. Stop work if you believe an activity is hazardous to workers or the environment
4. Respond to emergency signals, and report emergencies immediately
5) Comply with Worker Safety and Health requirements of the 851 Rule

For detailed information about the materials with which you work, consult the safety data sheets (SDSs) available in your work area.

sparks (Slide Layer)

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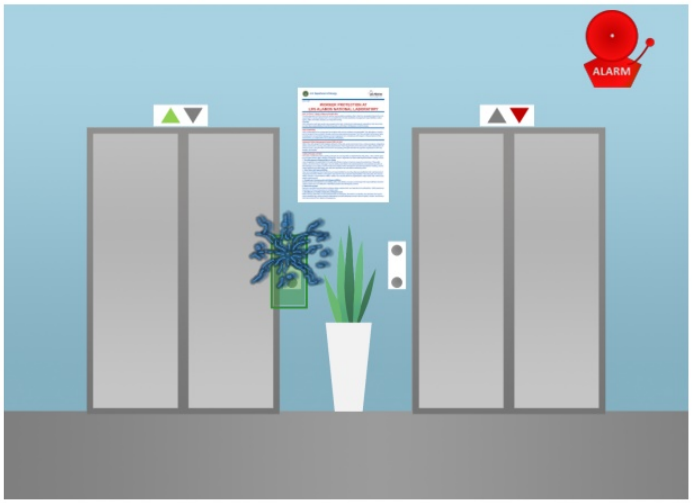

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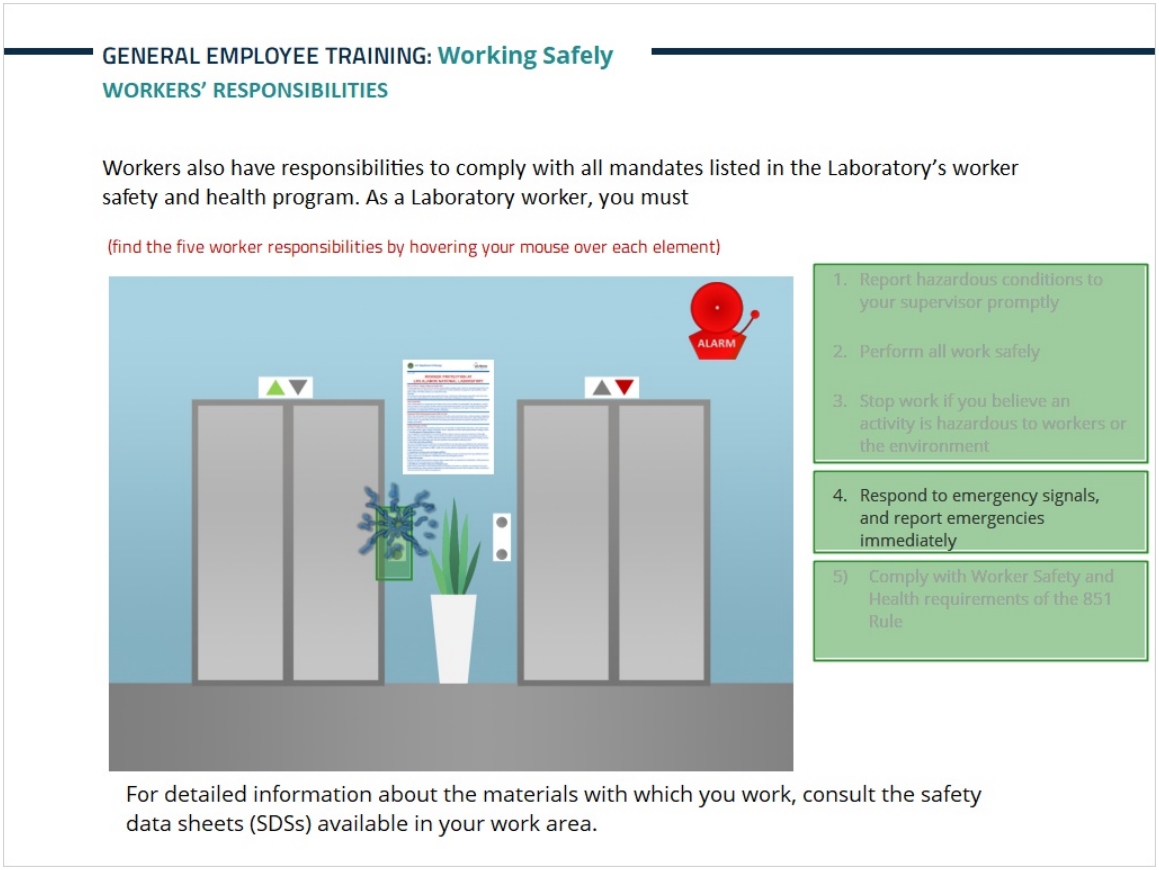
alarm (Slide Layer)



851 (Slide Layer)

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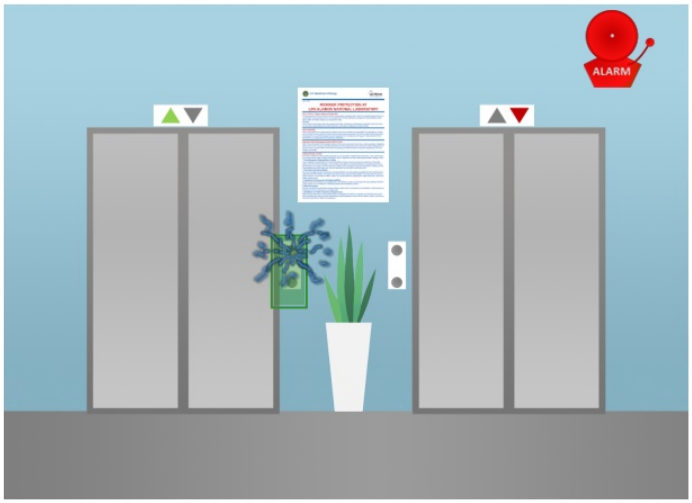

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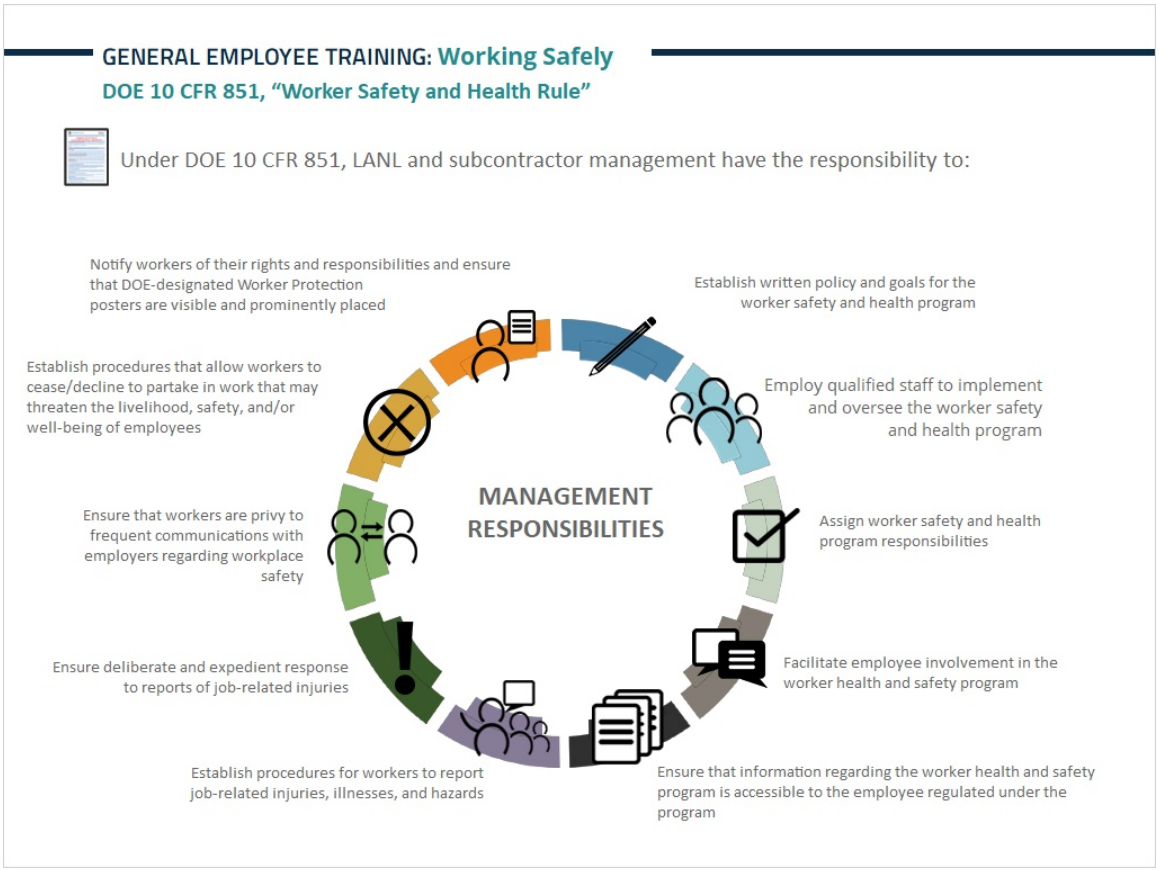
2.24 Lab's Responsibility



2.25 Employment WSST Involvement

GENERAL EMPLOYEE TRAINING: **Working Safely**

WORKER ENVIRONMENTAL SAFETY AND SECURITY TEAM (WSST)

The mission of the Worker Environmental Safety and Security Team is to improve safety and security at the Laboratory through the direct involvement of all people performing work on behalf of LANL.

The DOE Voluntary Protection Program (DOE-VPP) is widely recognized across the DOE Complex for promoting excellence in occupational safety and worker health. The key to the DOE-VPP is worker involvement.

There are more than 100 LANL WSSTs established at appropriate organizational levels (Institutional, Associate Directorate, Division, and/or Group) to ensure that all workers are represented.

You are encouraged to meet your WSST representative and participate in improving safety and security. You can also discuss environmental issues, concerns, and considerations at the Laboratory with your WSST representative.

2.26 Hazards in the Workplace

GENERAL EMPLOYEE TRAINING: **Working Safely**

TYPES OF HAZARDS

Observation and judgment, combined with objective scientific measurements, are used to determine the quality and quantity of a hazard. Be aware that the hazard may not give clear signs that you can sense.

Make sure you are aware of the health hazards in your work area and activities and what controls are in place to mitigate those hazards. If you have any questions or concerns about your work, contact your supervisor.

FOR EXAMPLE:

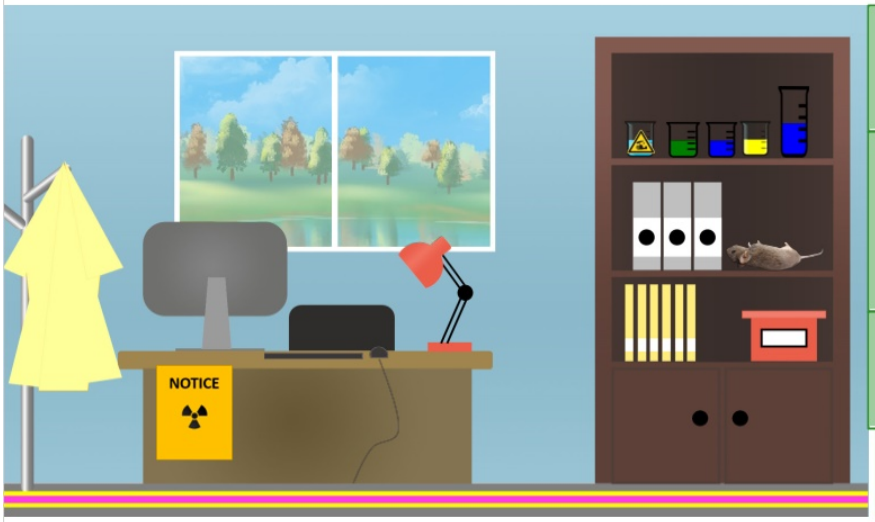
Your senses cannot detect an odorless, clear gas or vapor and cannot determine if the rigging on a crane can carry the weight of a load.

2.27 Health Hazards

GENERAL EMPLOYEE TRAINING: **Working Safely**

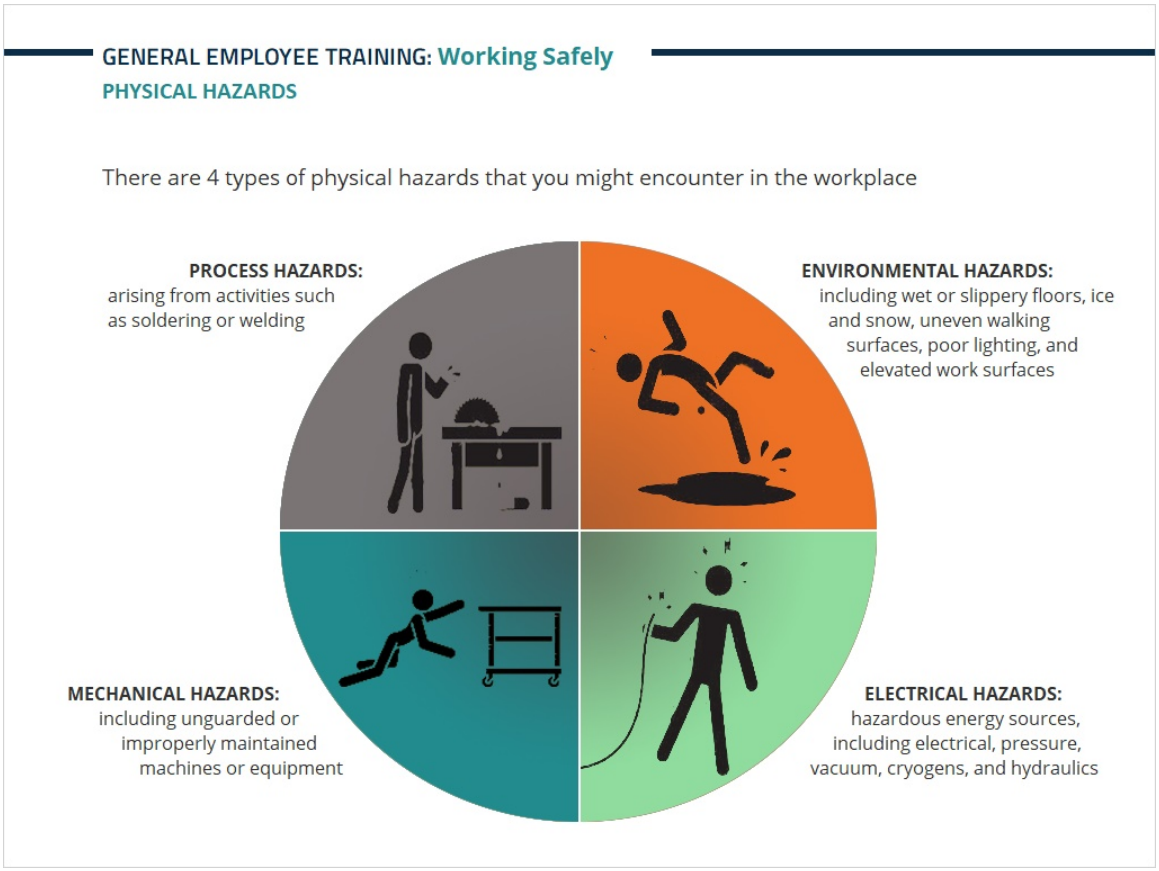
HEALTH HAZARDS

(find the 4 types of health hazards to which you could be exposed in the workplace)

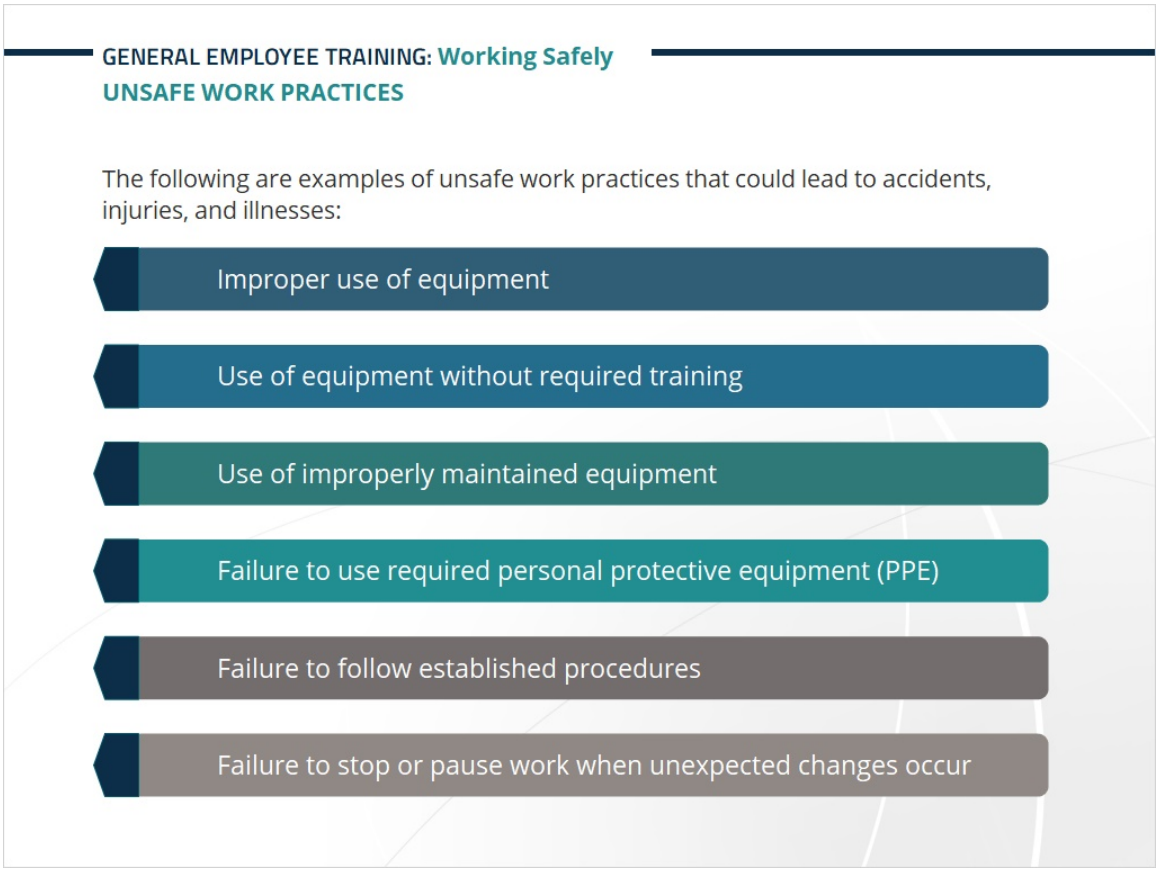


1) chemical hazards: such as inhaled gas, explosive chemicals, solvents, gasoline, oils, and acids
2) biological hazards: rodents, insects, molds, bacteria, yeasts, and viruses [such as hepatitis B virus (HBV), HIV, and hantavirus]
3) ergonomic factors: repetitive motion and improper posture when lifting or handling materials
4) others, including thermal and radiological hazards

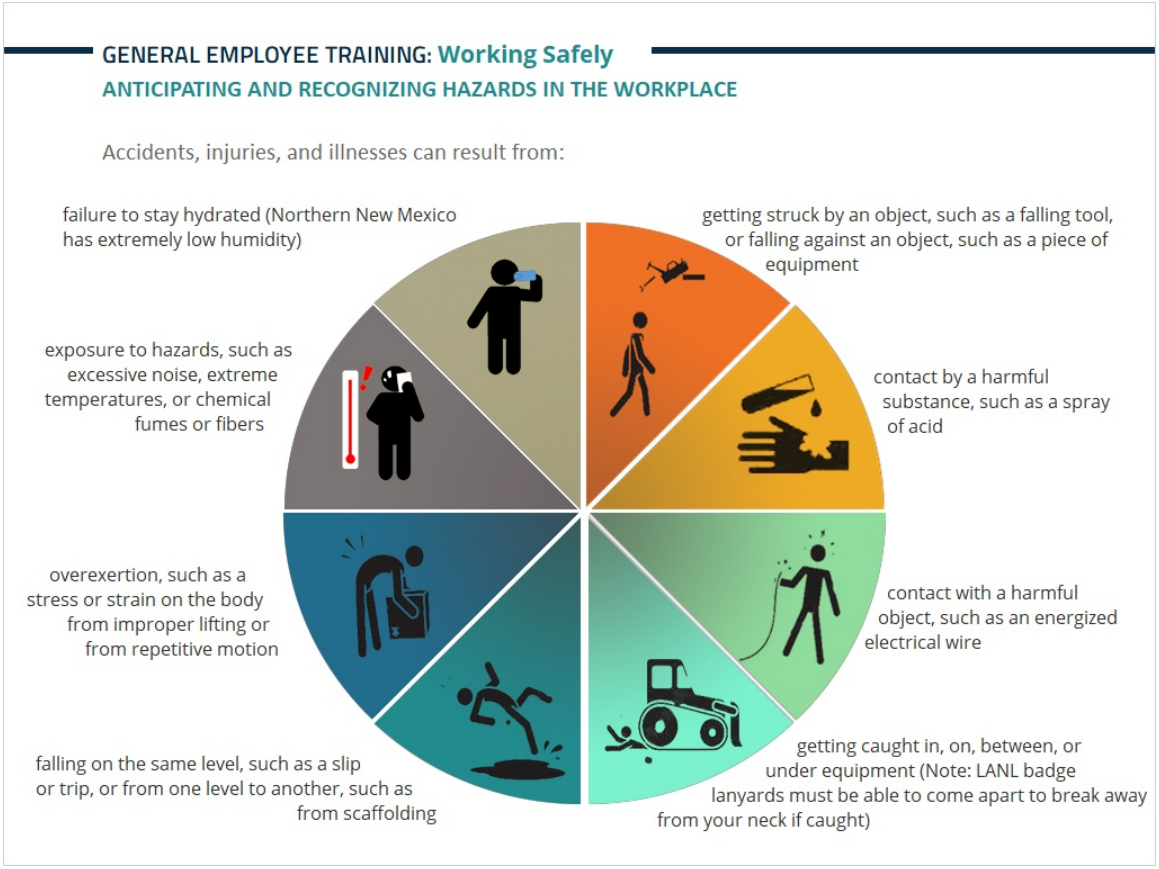
2.28 Physical Hazards



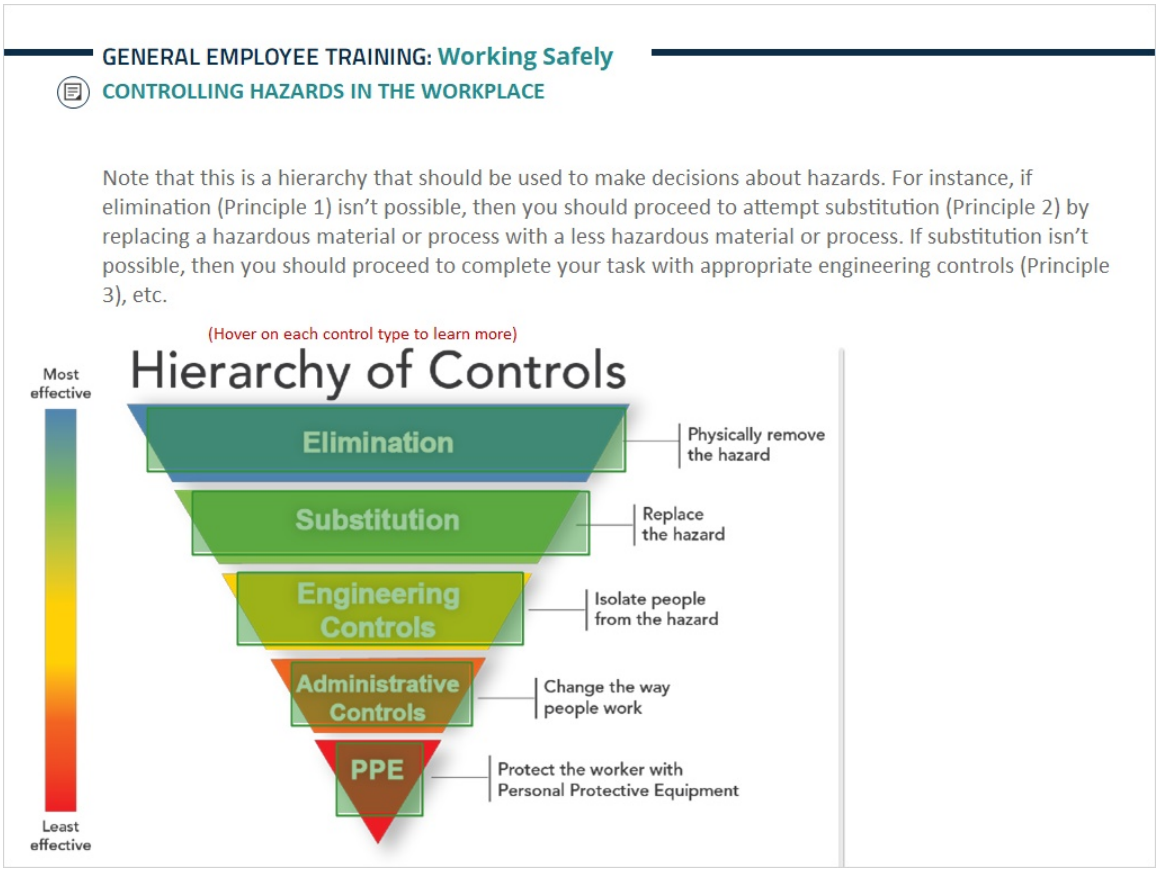
2.29 Unsafe Work Practices



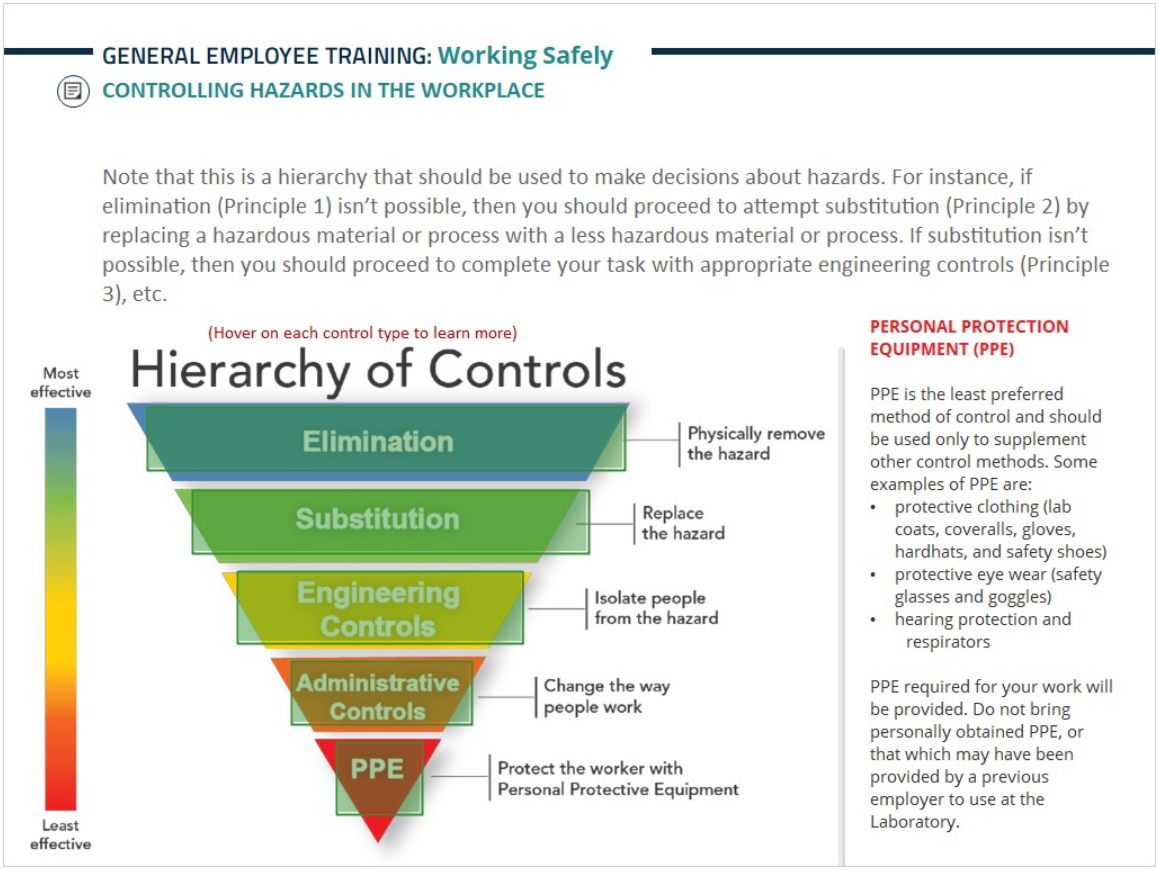
2.30 Accidents, Injuries, and Illnesses



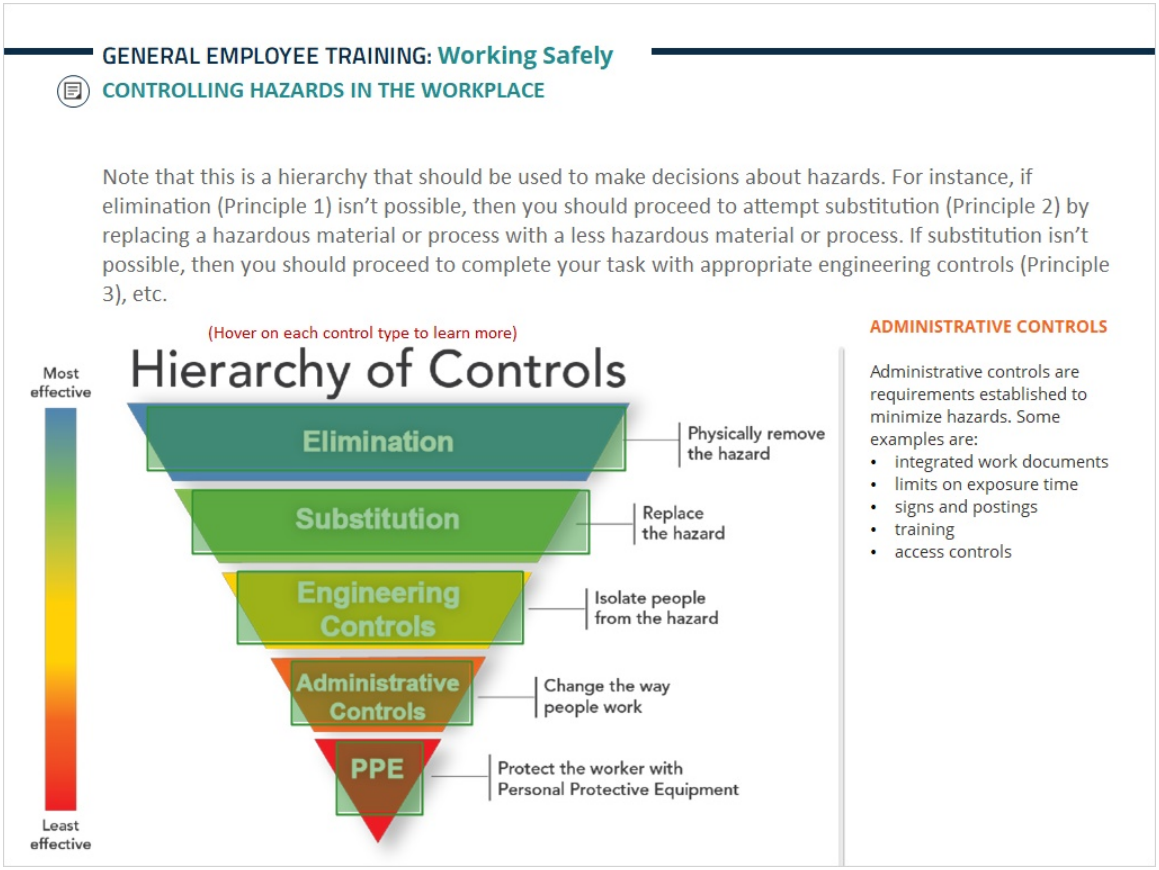
2.31 Controllling Hazards



PPE (Slide Layer)



ADMIN (Slide Layer)



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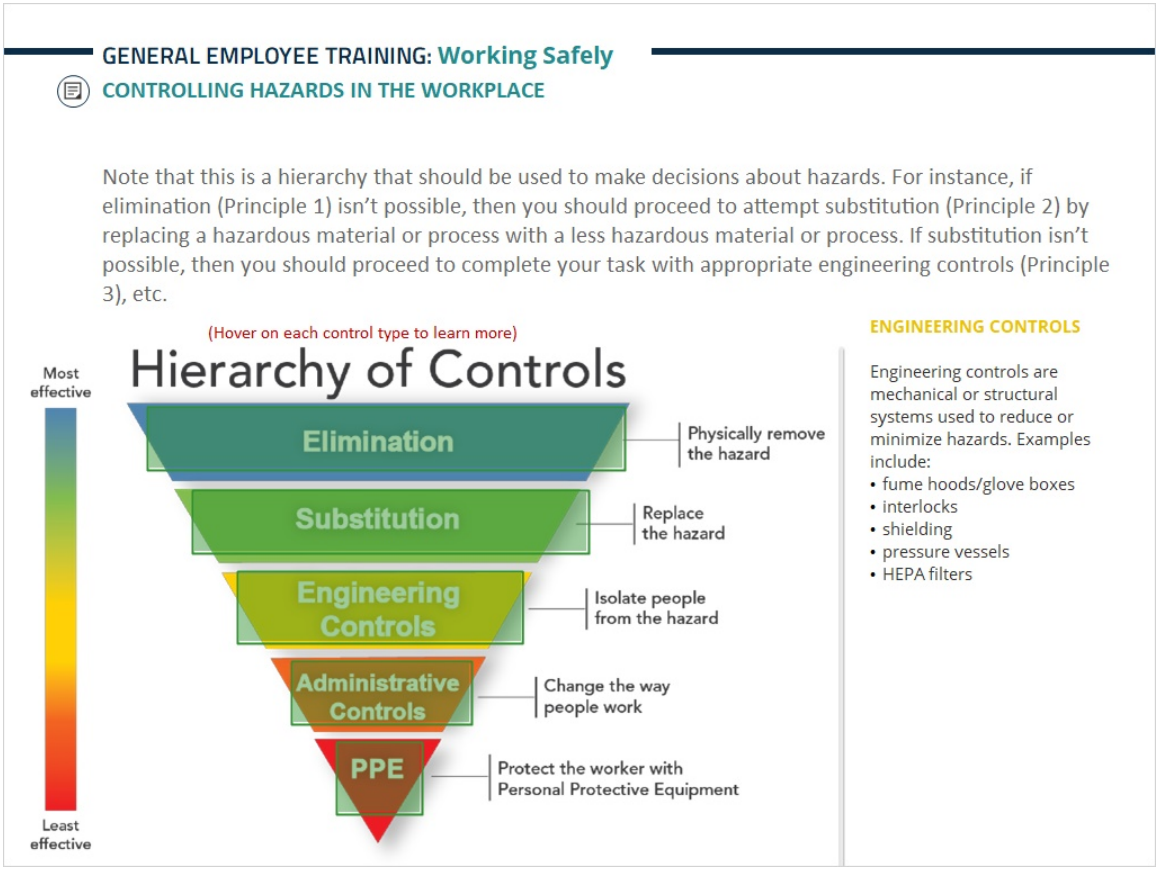

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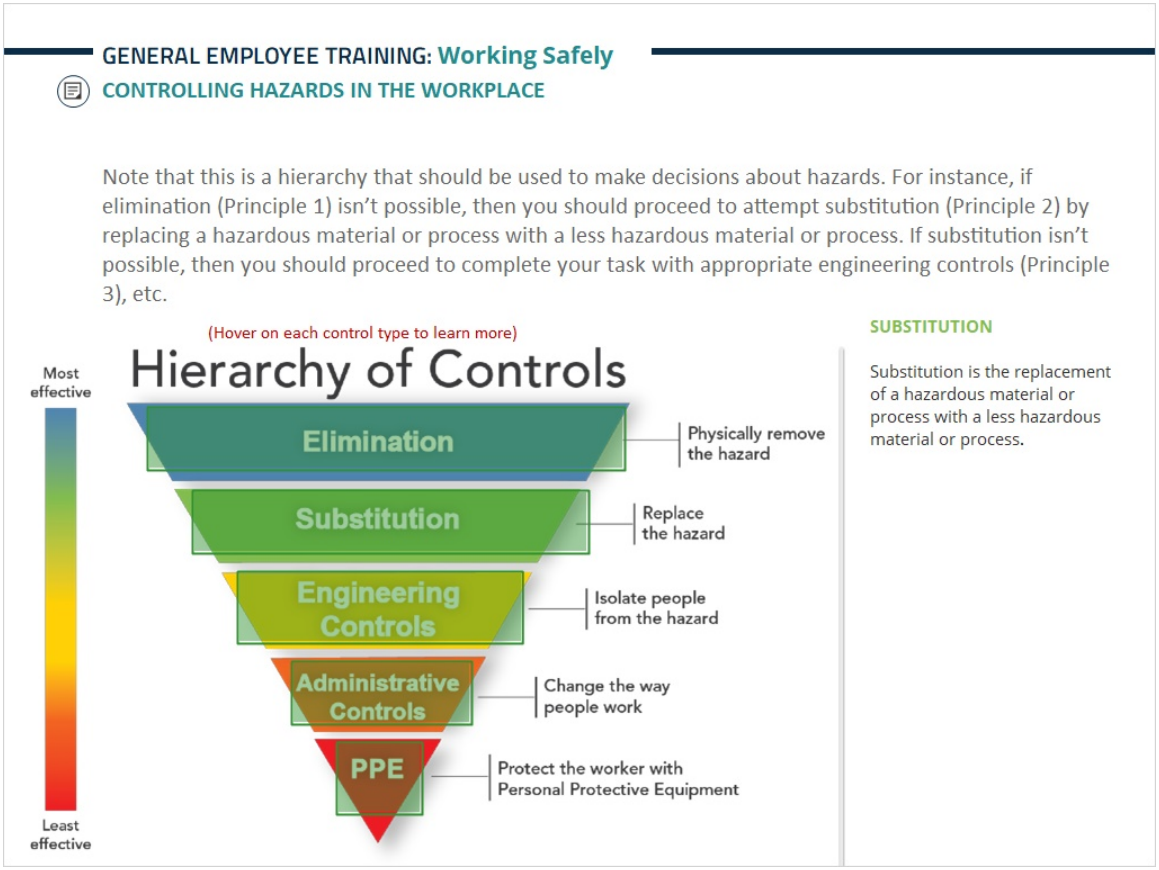

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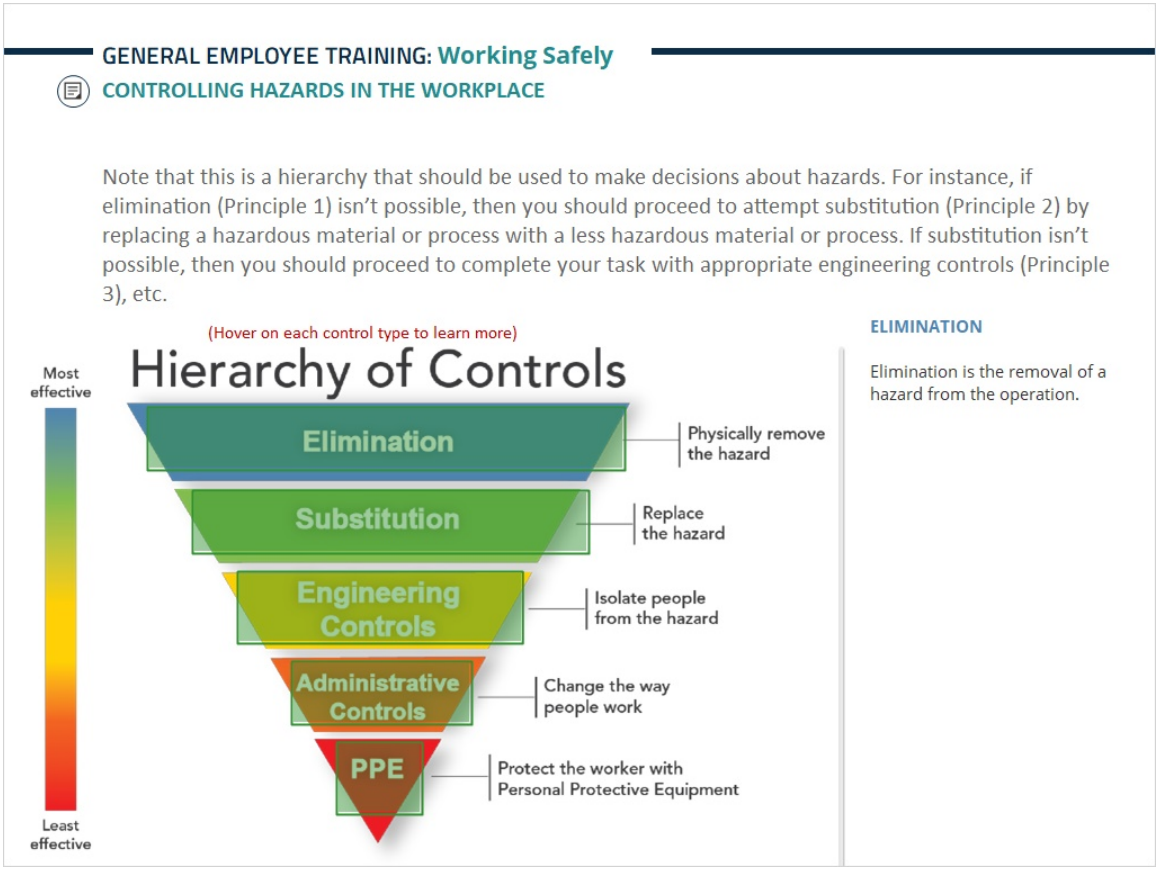
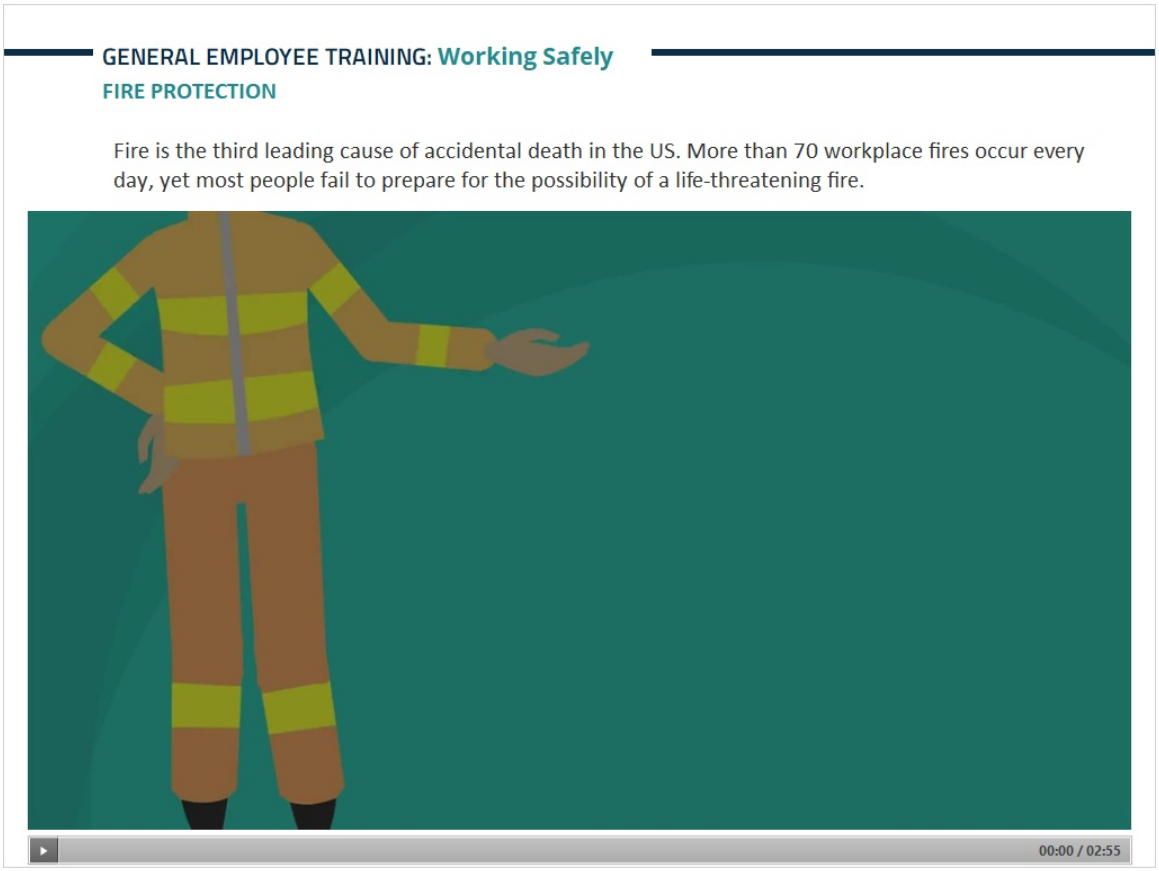
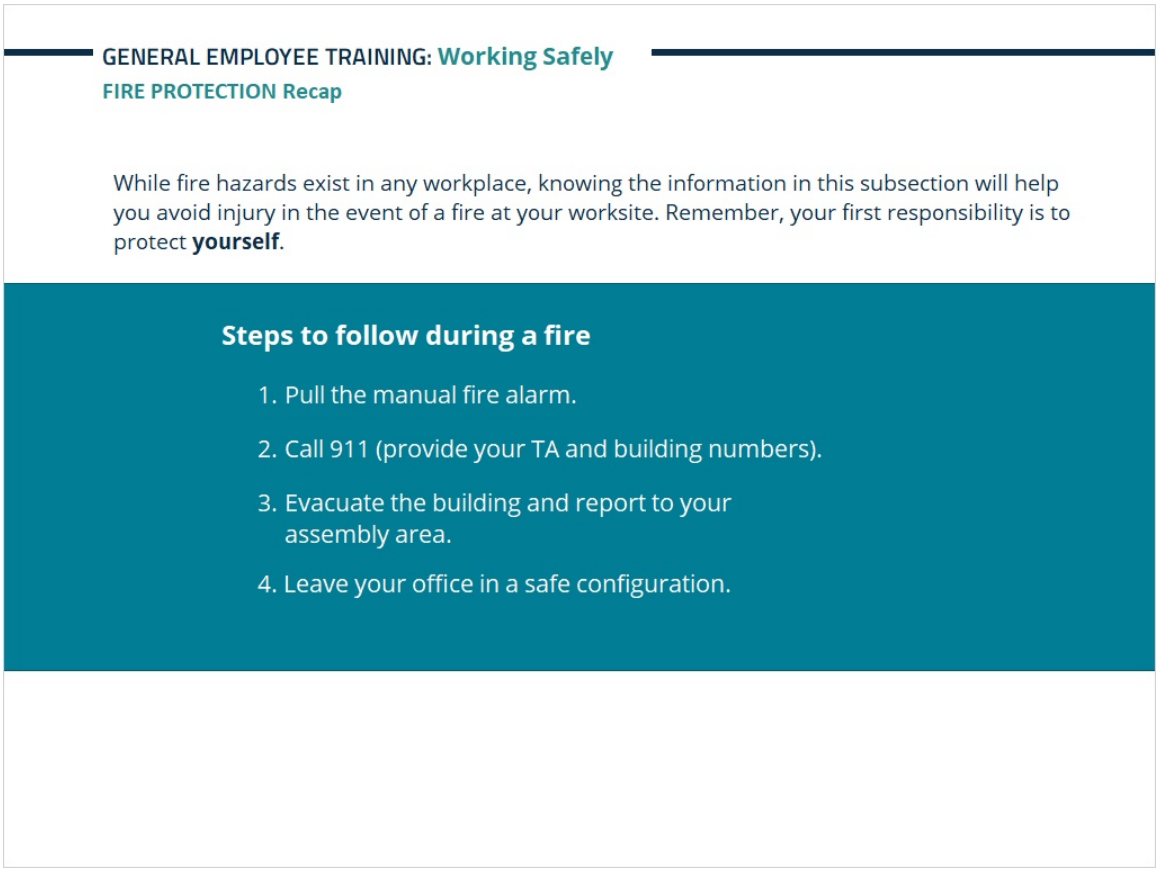


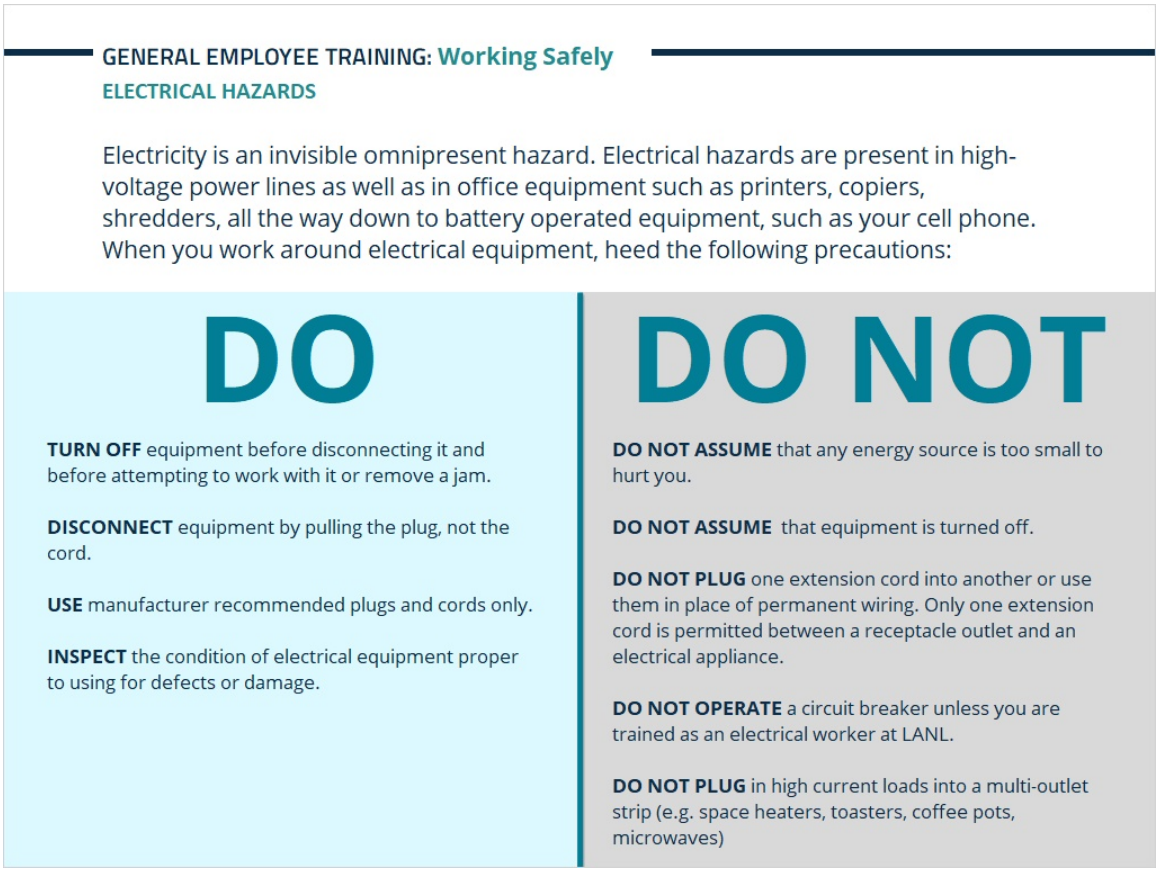
2.32 Fire Safety



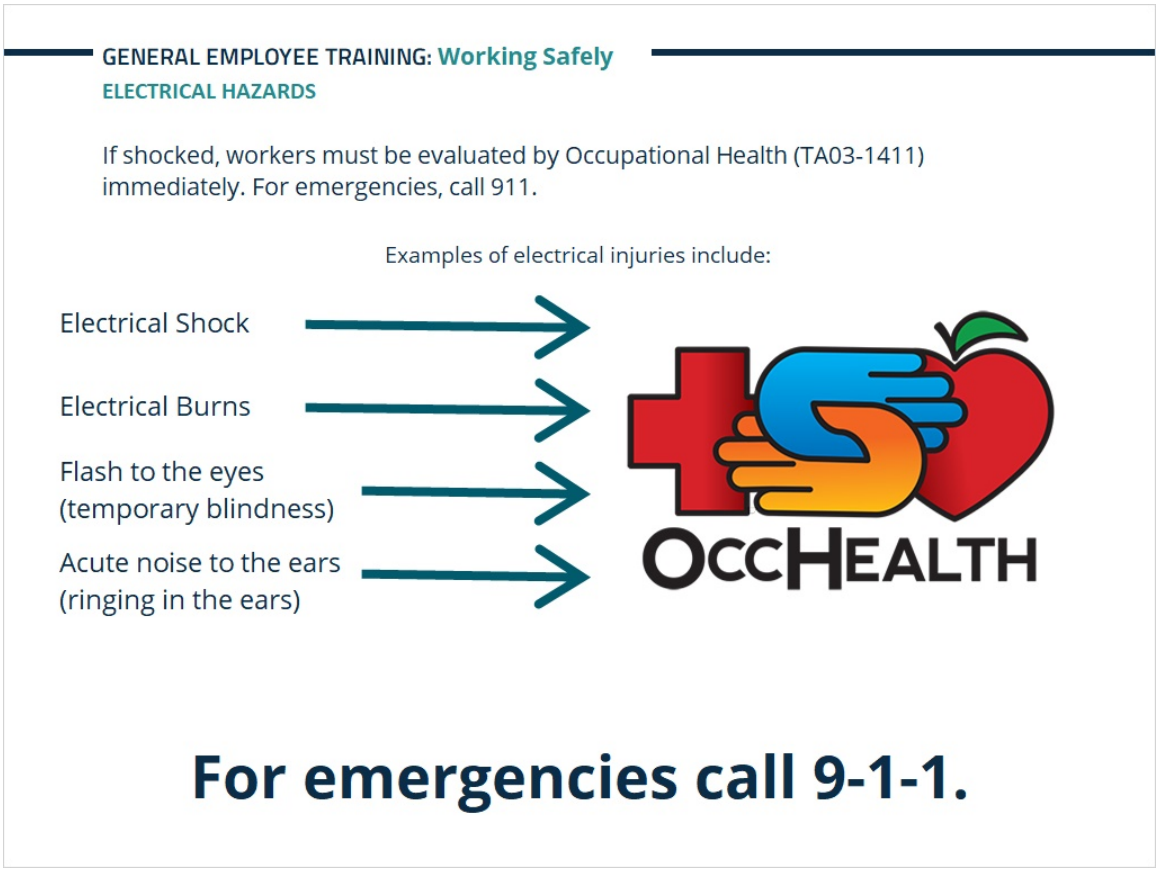
2.33 Fire Safety



2.34 Electrical Safety



2.35 Electrical Safety



2.36 Electrical Safety

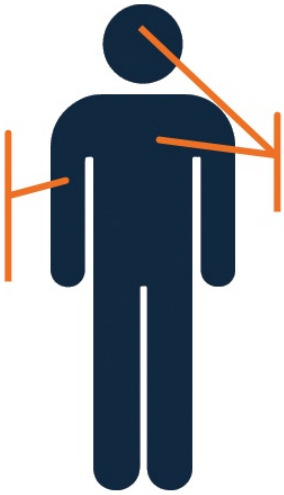
GENERAL EMPLOYEE TRAINING: **Working Safely**

ELECTRICAL HAZARDS

Shock Injury from Electricity

Shock is the flow of electrical current through any portion of the body from an external electrical source. Accidents can occur in which contact with electricity results in serious injury or death.

Electric shock can cause contraction of the muscles, resulting in violent reflex action or the inability to let go of the hazard.



The heart and brain are the parts of the body most vulnerable to electric shock.

2.37 Electrical Safety

GENERAL EMPLOYEE TRAINING: **Working Safely**

ELECTRICAL HAZARDS

Burn Injury from Electricity

Burns suffered in electrical accidents are of three basic types: electrical burns, arc-flash burns, and thermal contact burns.

Electrical Burns

Tissue damage (whether skin-deep or deeper) occurs because the body is unable to dissipate the heat from the current flow through the body.

Arc-flash Burns

Temperatures generated by electric arcs can melt nearby material, vaporize metal in close vicinity, cause heat burns, and ignite clothing.

Thermal Contact Burns

Occur when skin comes into contact with the hot surfaces of overheated electric conductors, including conductive tools and jewelry (e.g. shorting out a car battery with a wrench).

2.38 Electrical Safety

GENERAL EMPLOYEE TRAINING: **Working Safely**

ELECTRICAL HAZARDS

When using electrical equipment, a worker is protected primarily by engineering controls (i.e. design features) that prevent the worker from being exposed to a hazard. To prevent injuries like the ones listed above, ensure that the plug and cord powered by the facility has the Nationally Recognized Testing Laboratory (NRTL) certification marking.

CE

Note: A CE symbol is not an NRTL.

2.39 Electrical Safety

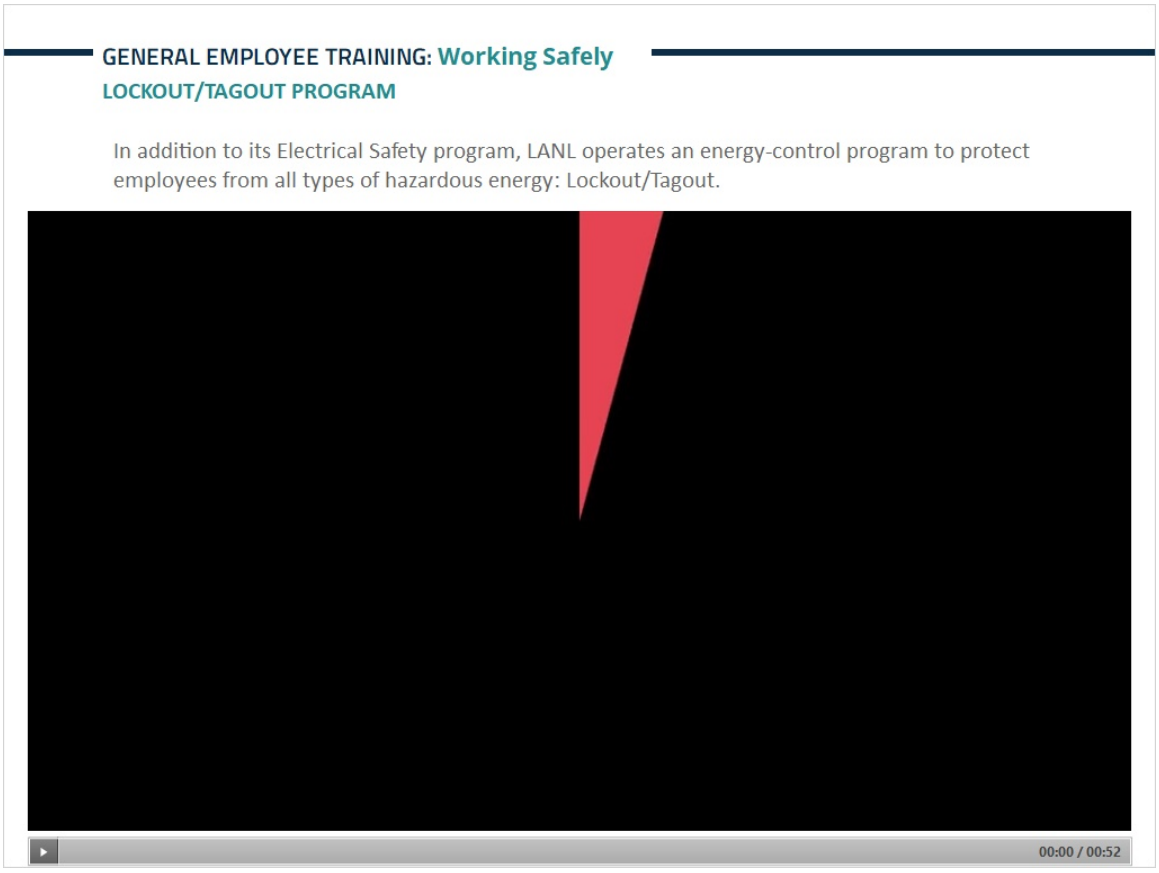
GENERAL EMPLOYEE TRAINING: **Working Safely**

ELECTRICAL HAZARDS

Know Your Electrical Safety Officer (ESO)

Electric Safety Officers serve as the primary focal point for electrical safety within your organization. ESOs inspect and improve electrical equipment, perform walk-throughs of work areas, and ensure electrical workers are qualified. in addition, they consult, assist, and facilitate safe electrical work and review and approve electrical Integrated Work Documents (IWDs) and other work control documents. Become familiar with your ESO by visiting esc.lanl.gov or the online building locator system.

2.40 Lockout/Tagout Program



2.41 Lockout/Tagout Program

GENERAL EMPLOYEE TRAINING: **Working Safely**

LOCKOUT/TAGOUT PROGRAM

Lockout/tagout is a procedure put in place to reduce workplace hazards involving machinery and equipment.

What Is the Purpose of Lockout/Tagout?

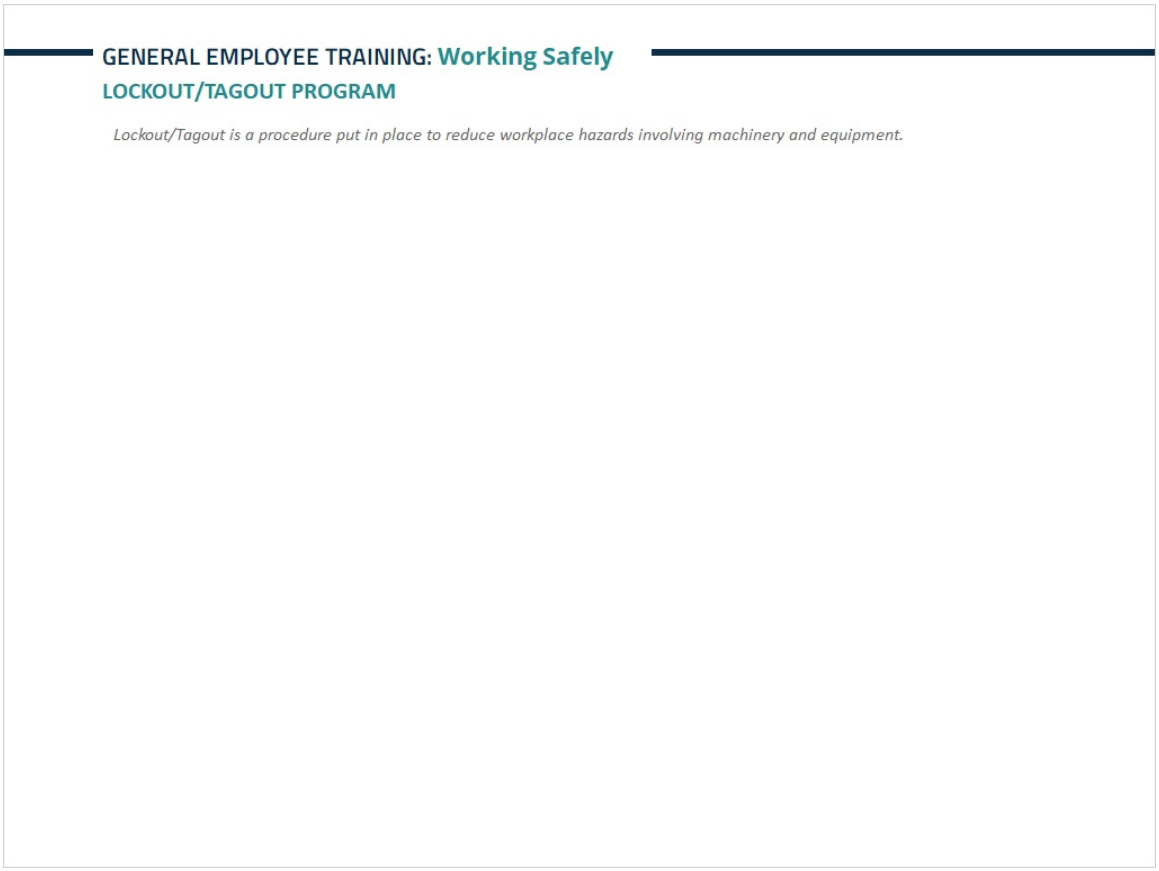
Lockout/tagout prevents injury caused by the unexpected startup of a machine or the release of hazardous energy while workers are repairing equipment. Every year people are injured, maimed, and killed in accidents either because they failed to isolate the energy source of machinery they are working on or because a fellow worker has restarted equipment, not knowing anyone was in harm's way.

The Occupational Safety and Health Administration (OSHA) standard requires the use of procedures for isolating machines or equipment from their energy source before work is performed on the machine or equipment. These procedures include the placement of locks and tags to prevent the unexpected energization, startup, or release of stored energy that could hurt employees who are working on equipment, machines, or systems.

The Energy Control program is presented in P101-3, Lockout/Tagout for Hazardous Energy Control, which requires the use of locks and tags. Tags alone are unacceptable, except in certain circumstances.

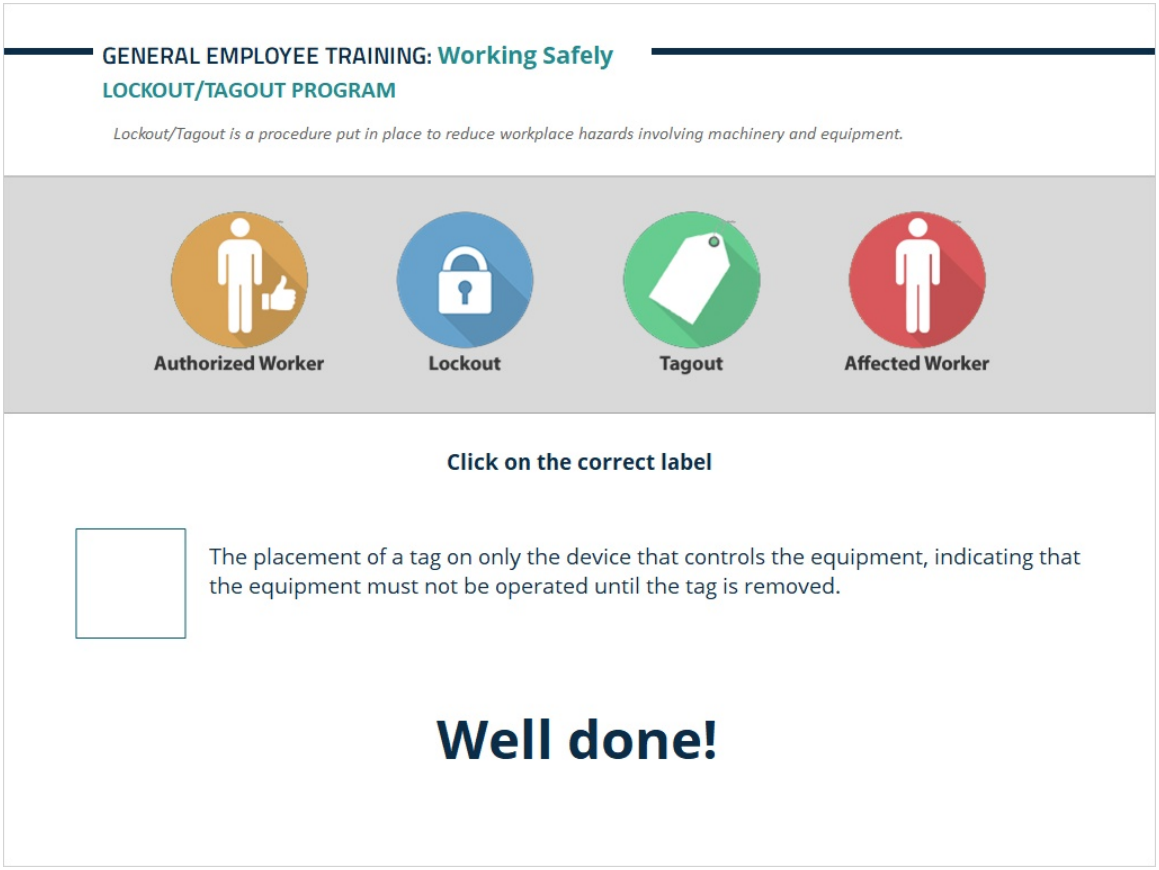
You **must** complete lockout/tagout training before you are authorized to execute lockout/tagout. Discuss this issue with your supervisor.

2.42 Lockout/Tagout Program



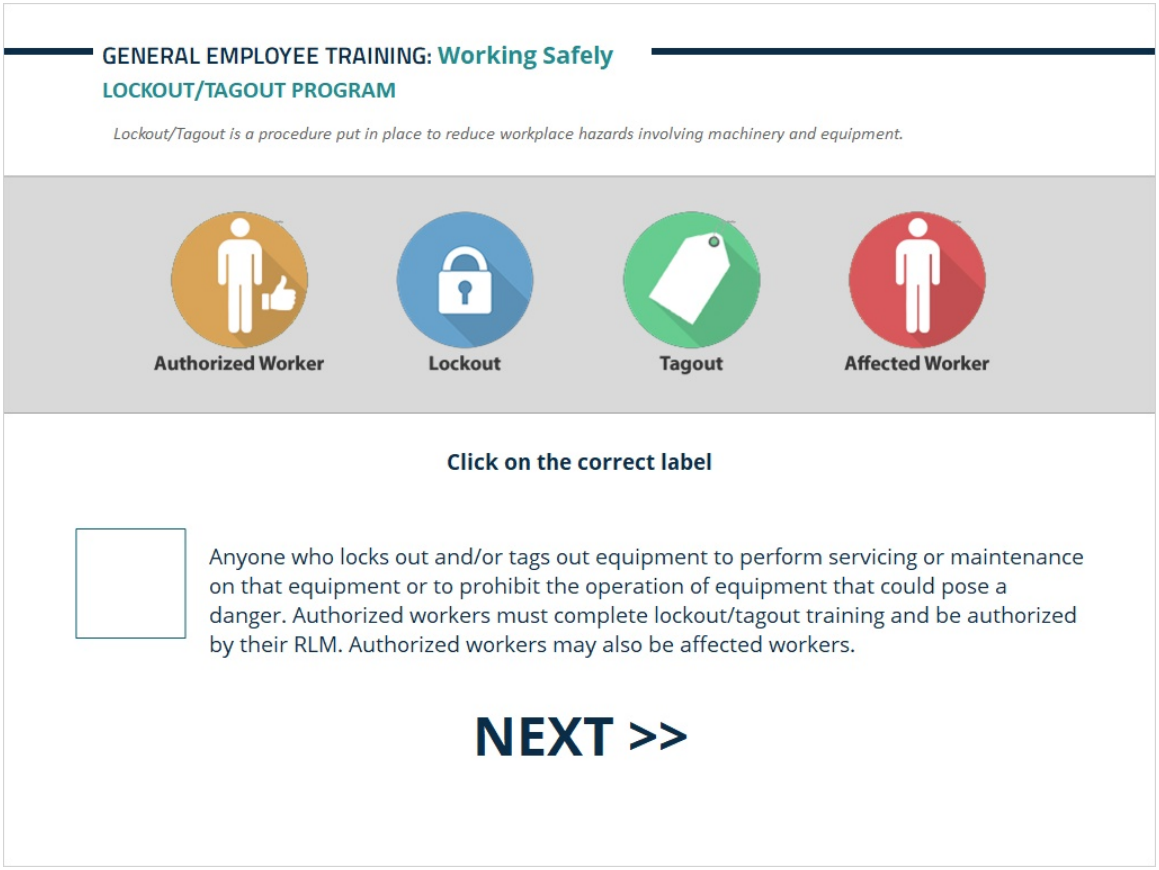
Lockout (Slide Layer)

Tagout (Slide Layer)



Affected (Slide Layer)

Authorized (Slide Layer)



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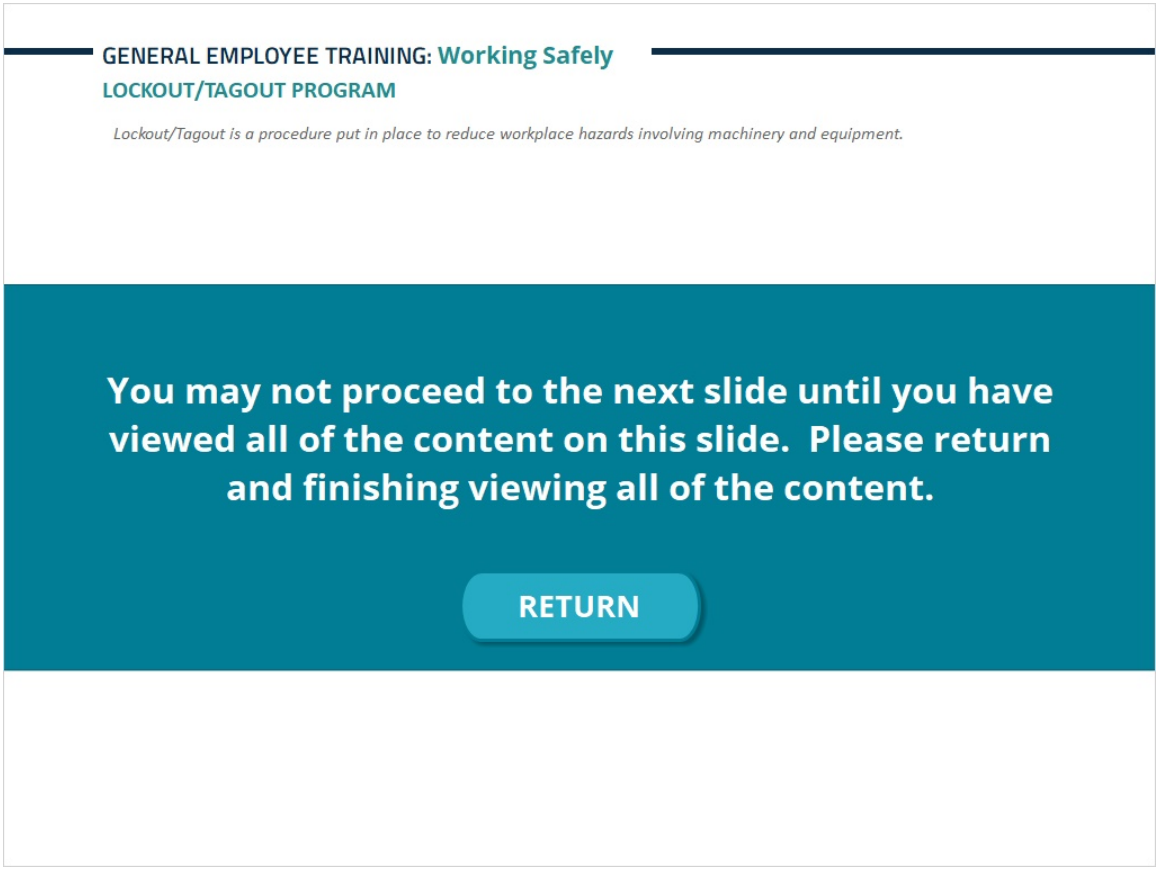


2.43 Lockout/Tagout Program

GENERAL EMPLOYEE TRAINING: **Working Safely**

LOCKOUT/TAGOUT PROGRAM

What is the Purpose of Lockout/Tagout?

Lockout/tagout prevents injury caused by the unexpected startup of a machine or the release of hazardous energy while workers are repairing equipment.

Who Conducts Lockout/Tagout Procedures?

Authorized workers conduct lockout/tagout procedures. These workers are appointed by line managers to service or maintain equipment, machinery, or systems and are trained in accordance with P101-3.

Why is Lockout/Tagout Important to You?

Anyone whose work is interrupted or otherwise affected by lockout/tagout is an affected worker. If you use a machine on which service or maintenance is performed under lockout/tagout or if you work in an area in which such service or maintenance is performed, you are an affected worker.

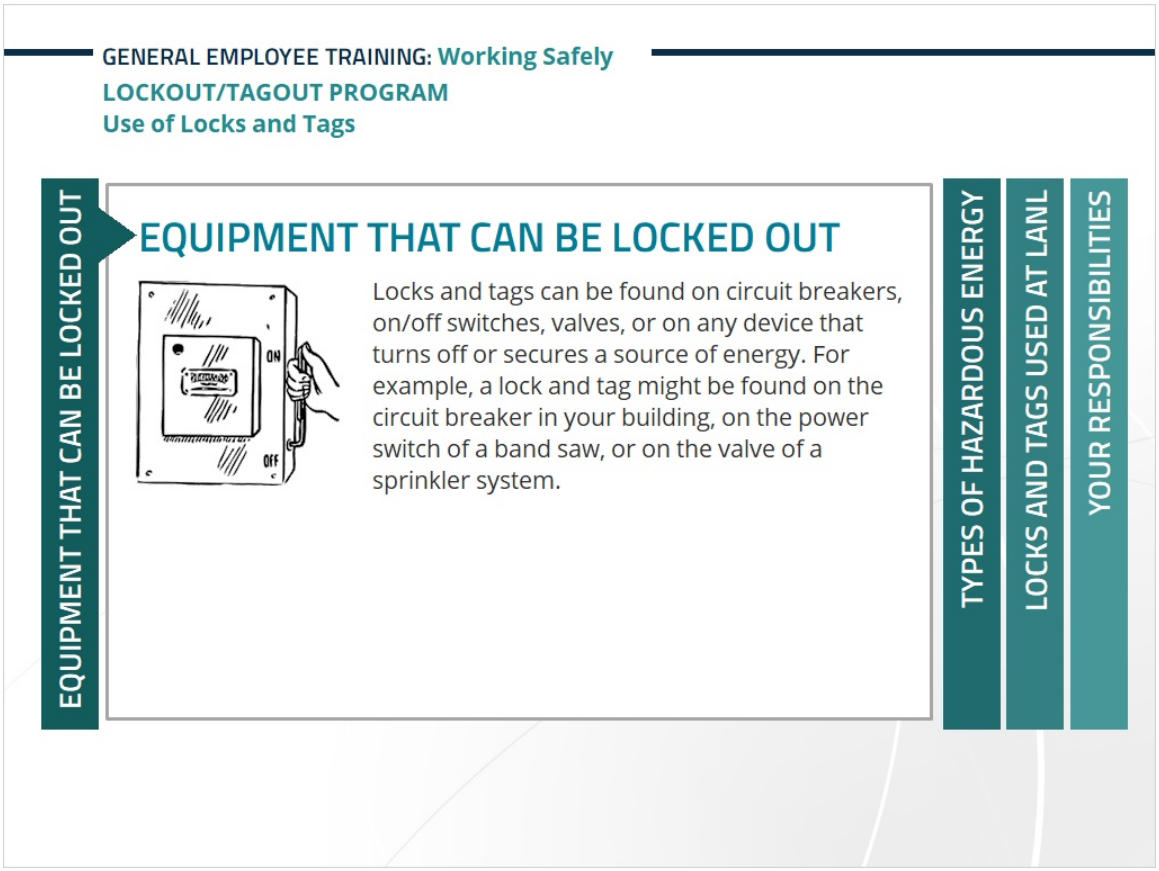
Regardless of your job at LANL, your work may require you to enter an area in which tags, with or without locks, are being used. Your entry into one of these areas will make you an affected worker. Your awareness of lockout/tagout procedures will help prevent workplace injuries.

DO NOT: 1) attempt to remove or alter locks or tags, or 2) attempt to restart or re-energize machines or equipment that is locked or tagged.

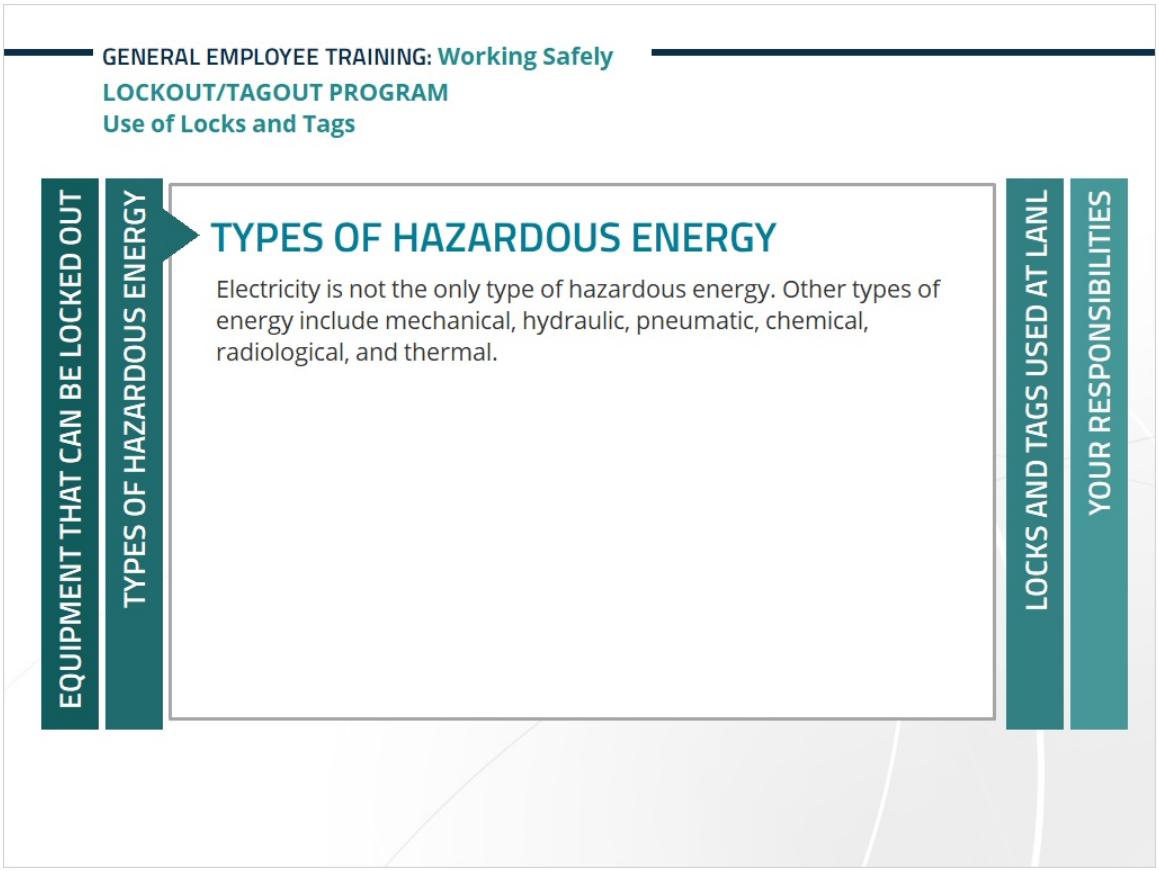
Required Training

To be a lockout/tagout authorized worker, you must complete hands-on classroom training.

2.44 Lockout/Tagout

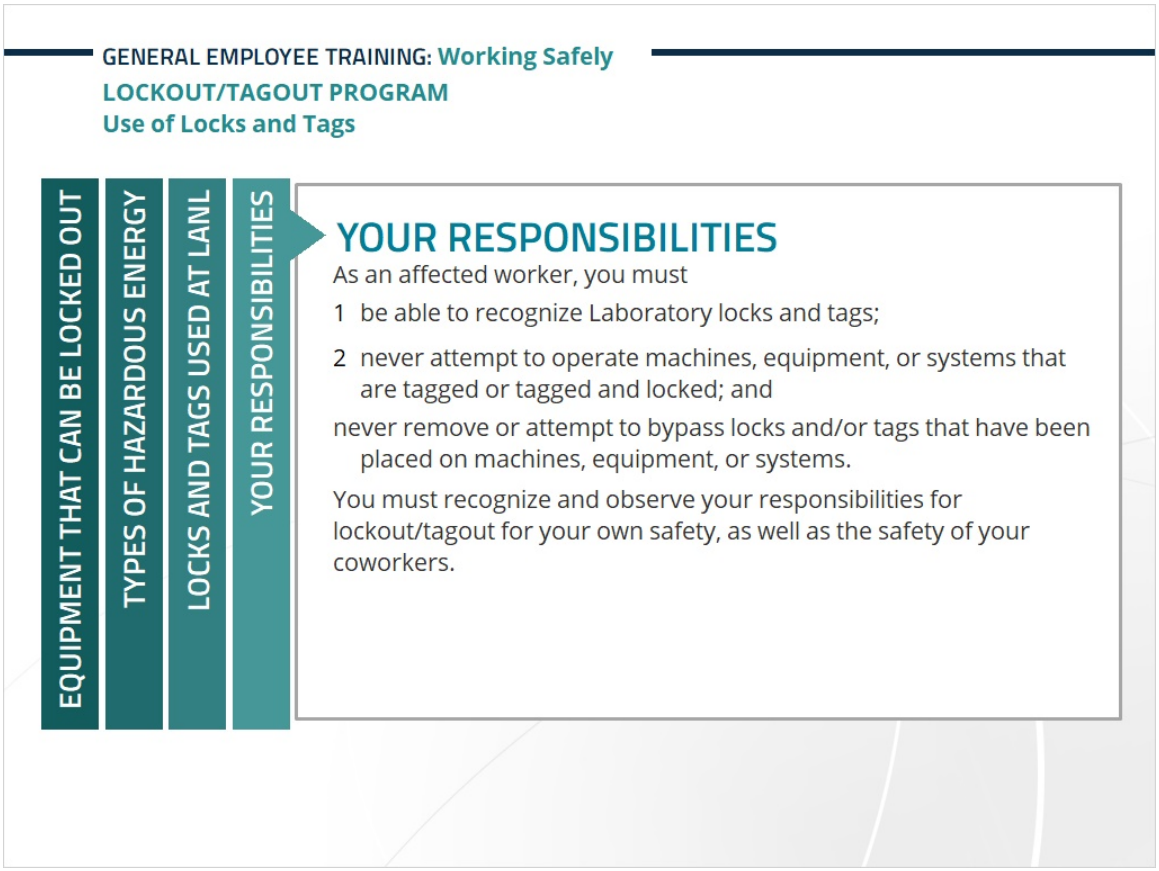


2.45 Lockout/Tagout



2.46 Lockout/Tagout

2.47 Lockout/Tagout



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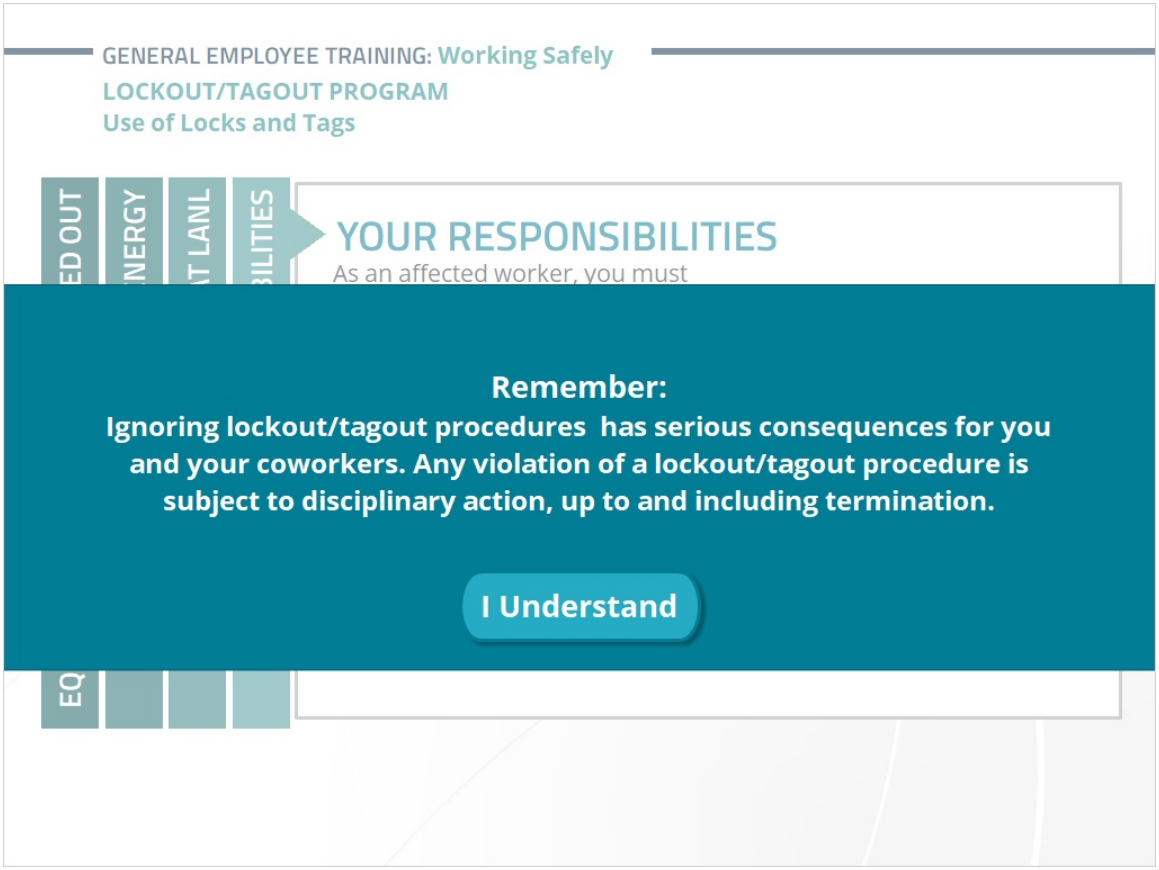
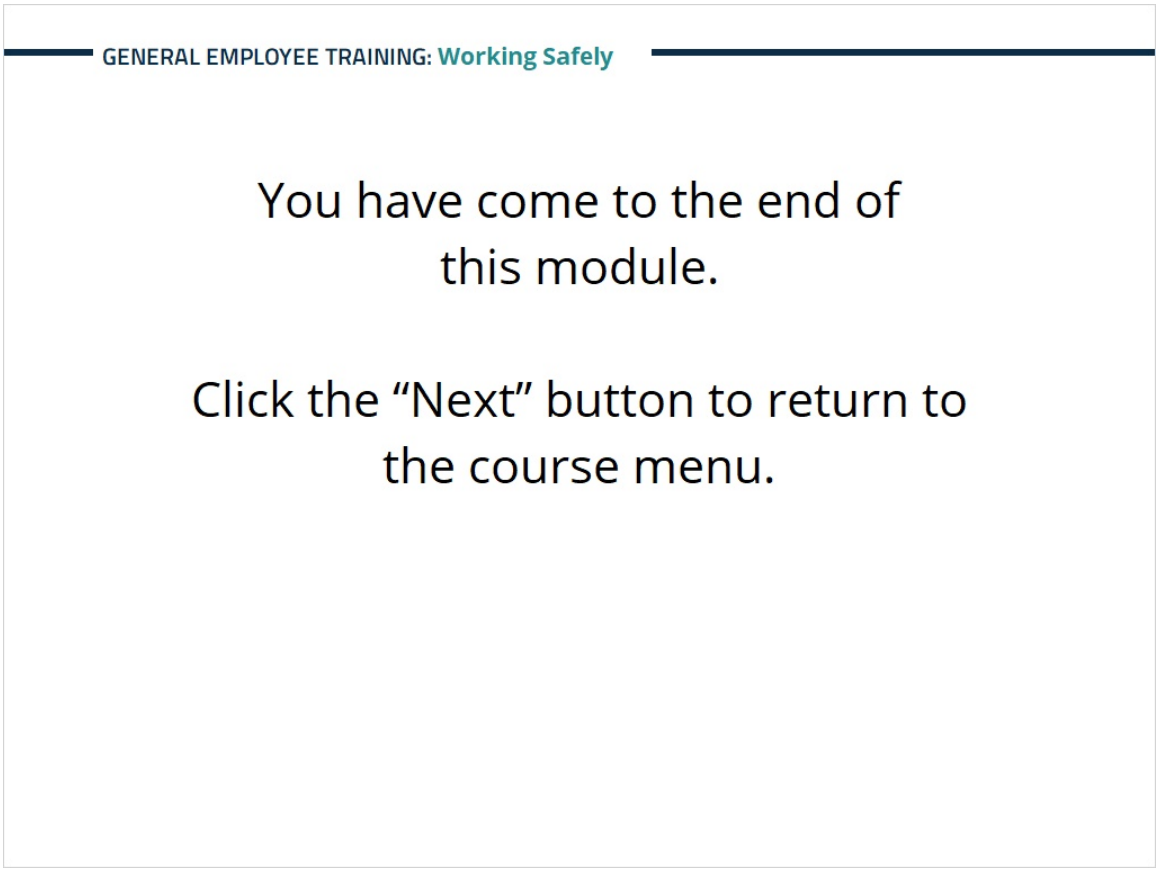


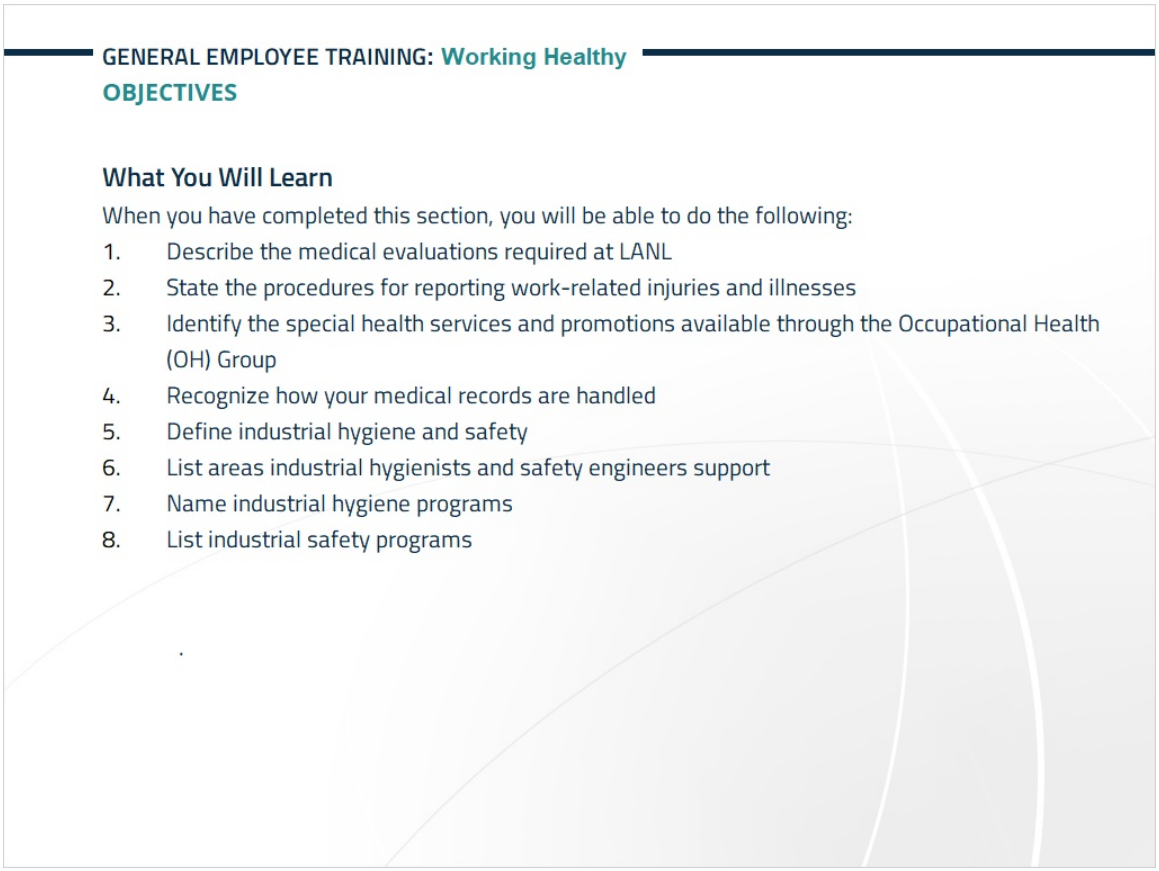
2.48 End of Module



3. Work Healthy

3.1 Introduction

3.2 Objectives



3.3 Occupational Health Services

GENERAL EMPLOYEE TRAINING: **Working Healthy**

OCCUPATIONAL HEALTH (OH) SERVICES

The Occupational Medicine (OM) clinical services building, located at TA-3, SM-1411, has a medical clinic for outpatient care and medical offices and facilities for medical testing, radiological imaging (x-ray) services, decontamination, counseling, and medical record storage.

ABOUT MEDICAL SERVICES

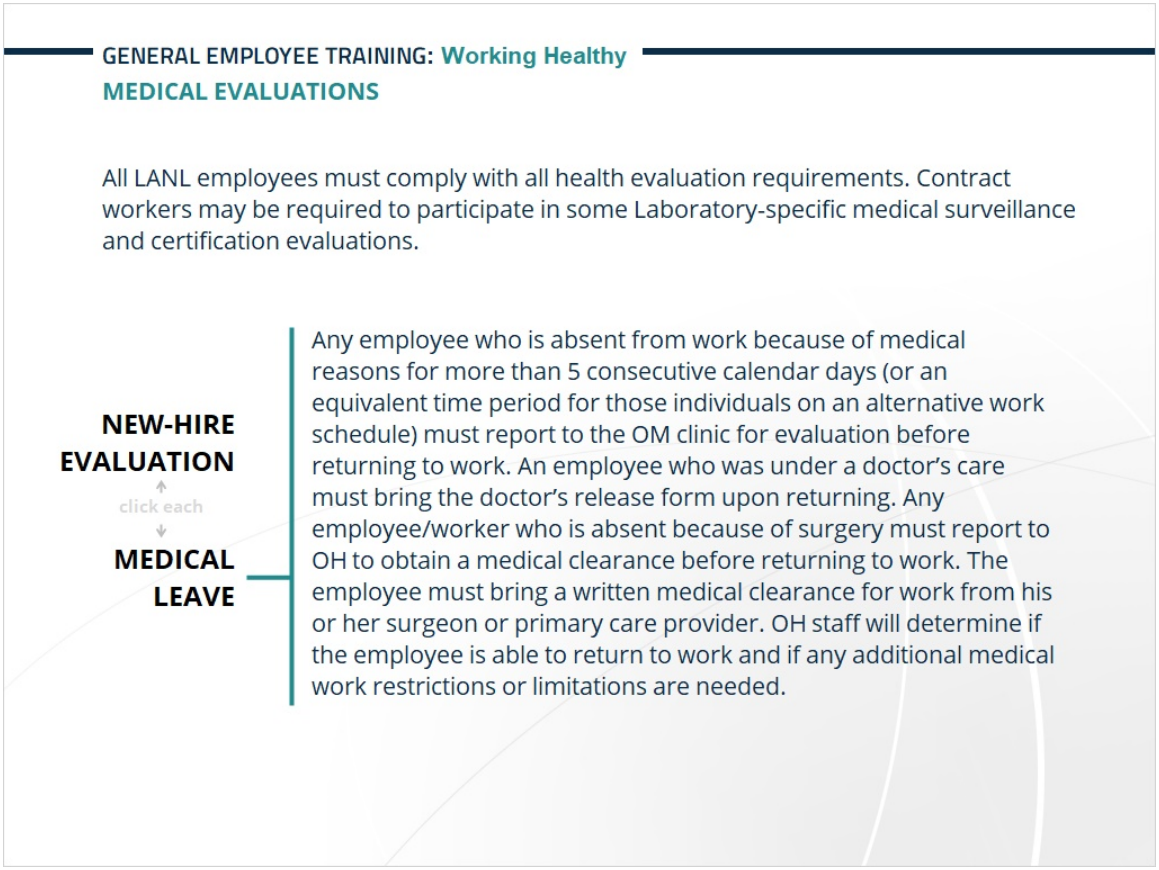
All medical services offered by OH are available to Laboratory employees. Services to contract workers vary with contracts between their employers and the Laboratory. Contract workers should ask their employers about available services.

MISSION

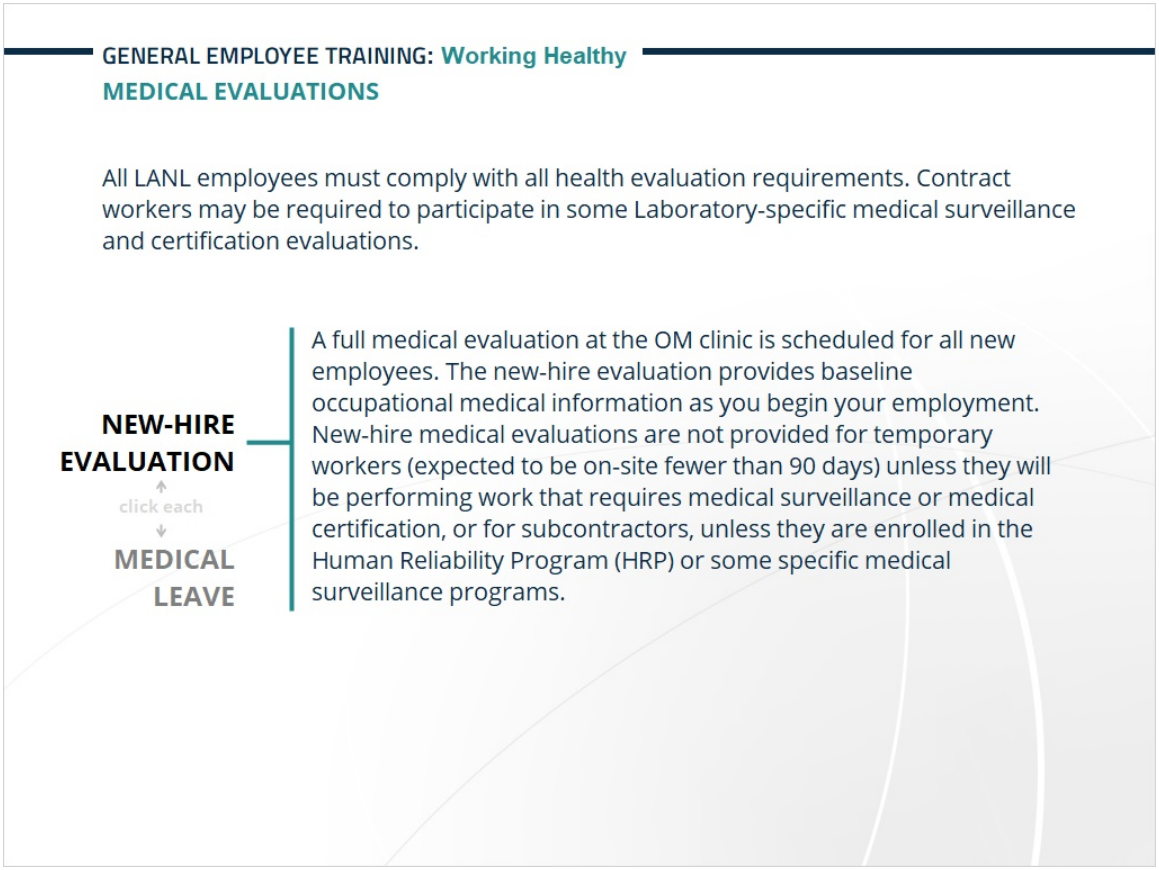
As part of its mission, Los Alamos National Laboratory's Occupational Health (OH) Group provides medical evaluations; clinical care for work-related injuries and illnesses, including radiation and contamination accidents; and health-promotion services. OH staff also oversee the Laboratory's reproductive health hazards program, work-related travel clinic services, substance abuse and mental health counseling (Employee Assistance Program), family and medical leave assistance, and medical surveillance, as well as medical certification programs.

3.4 Medical Evaluations

medical leave (Slide Layer)

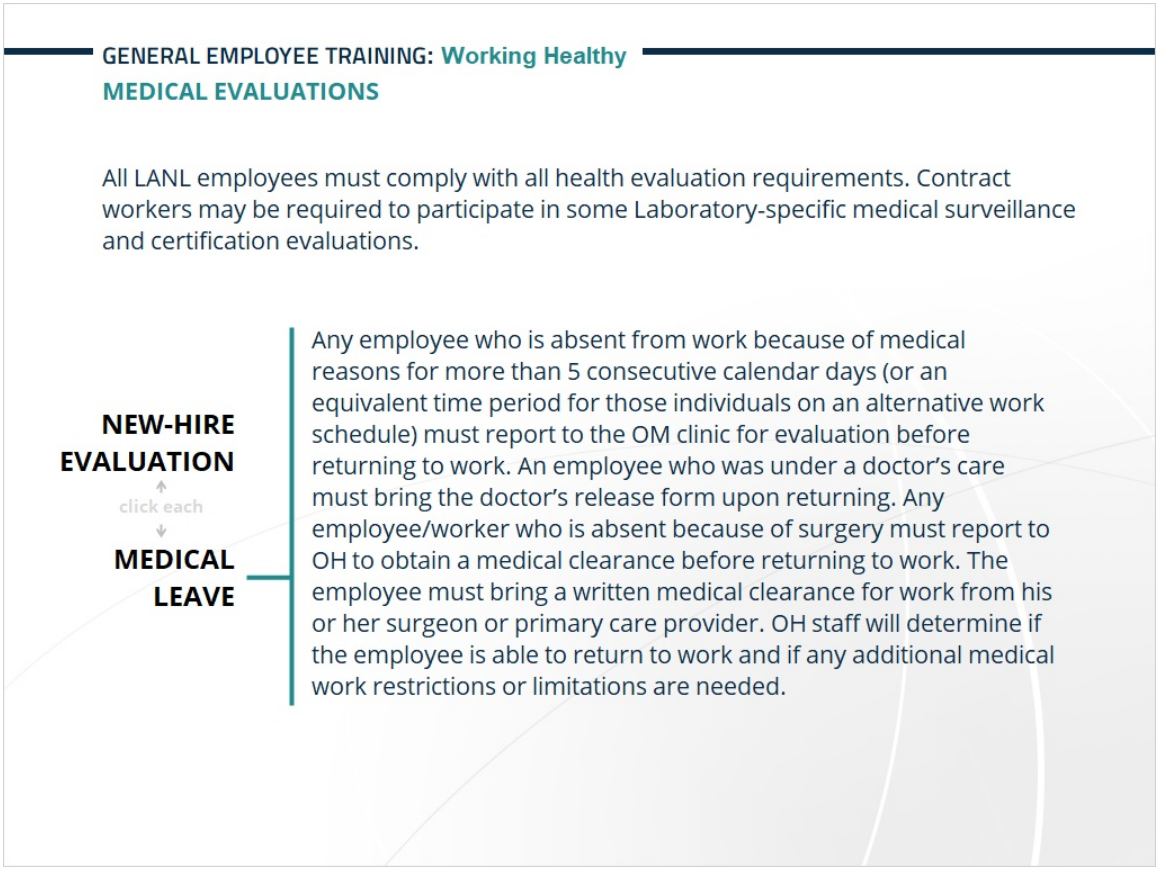


new hire (Slide Layer)

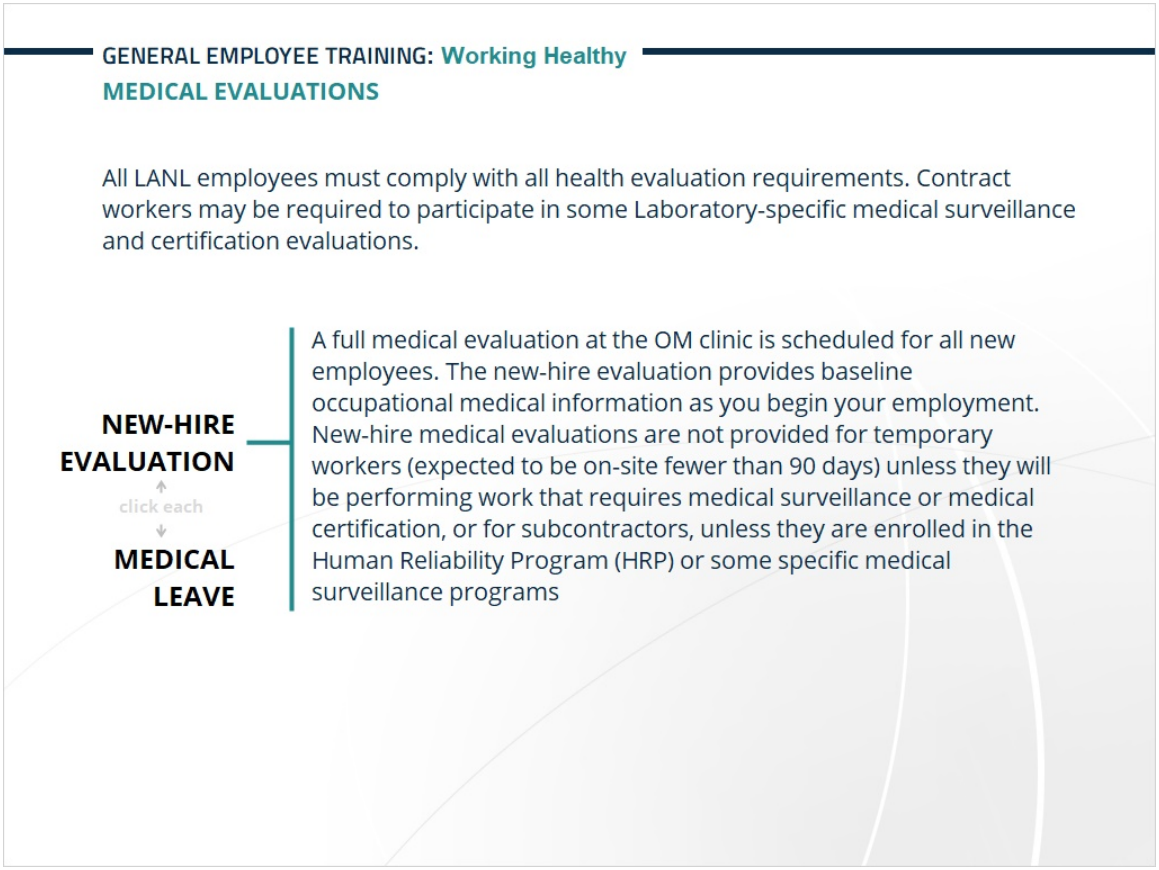


3.5 Medical Evaluations

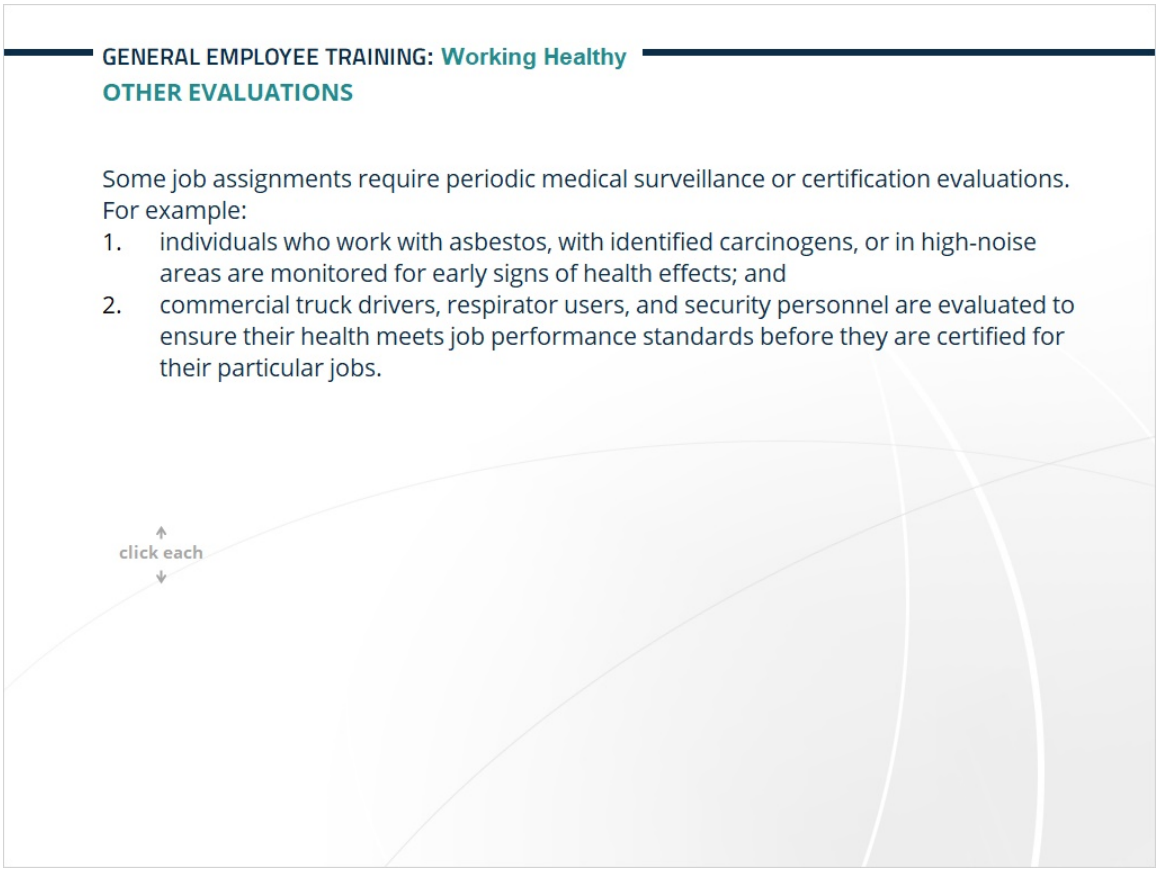
medical leave (Slide Layer)



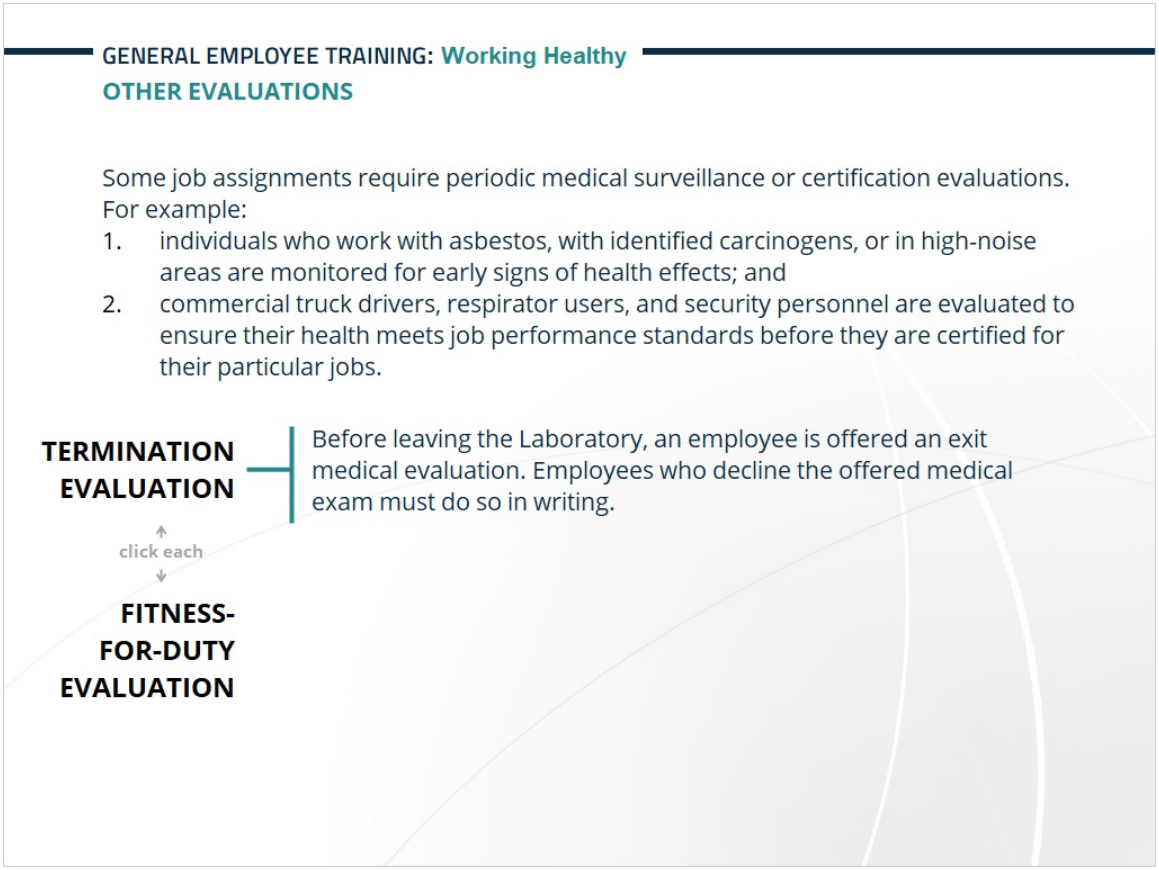
new hire (Slide Layer)



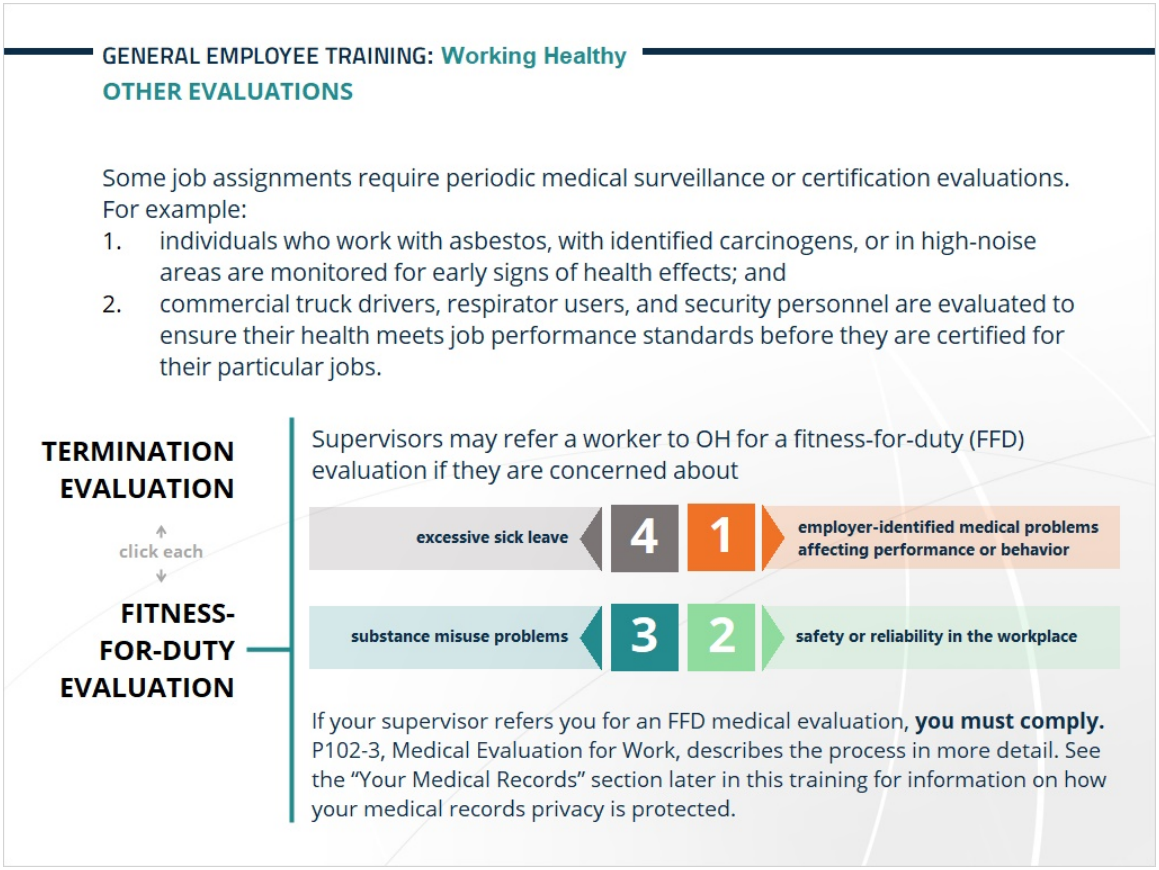
3.6 Other Evaluations



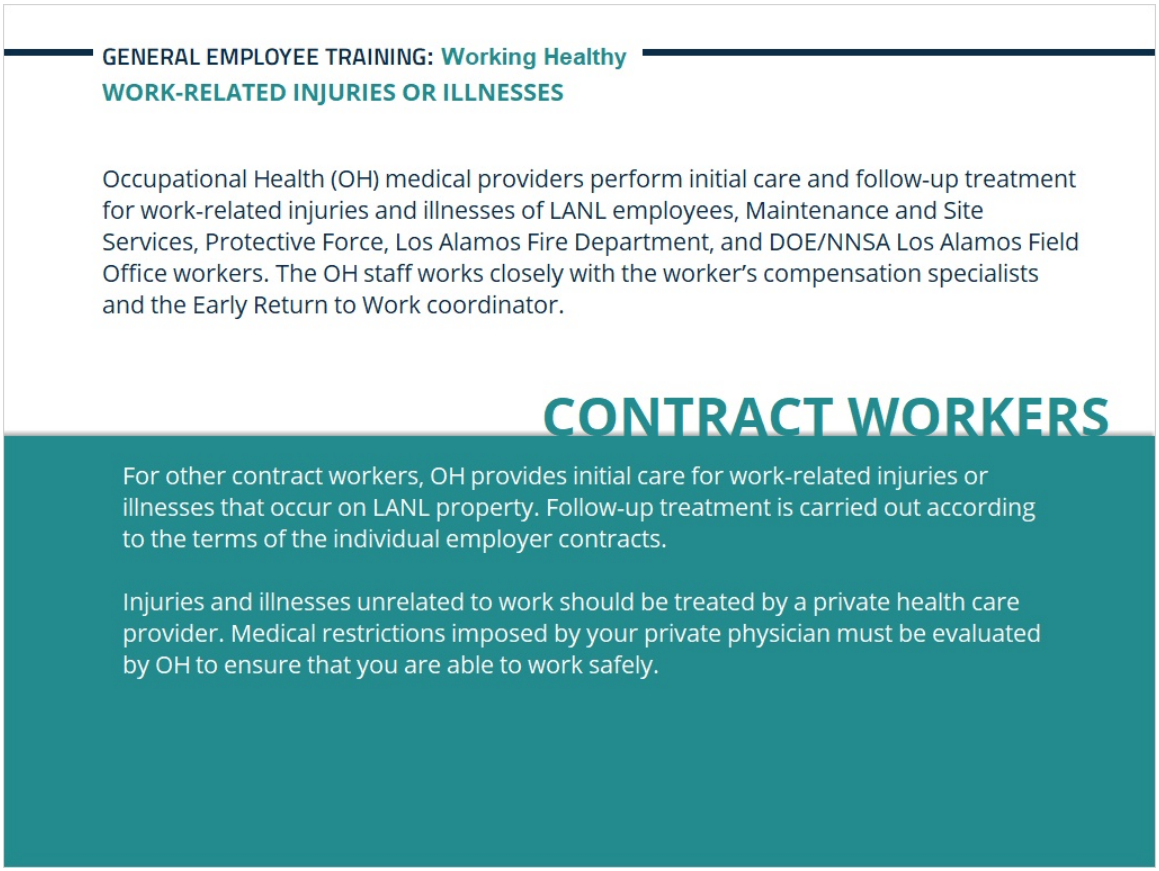
termination (Slide Layer)



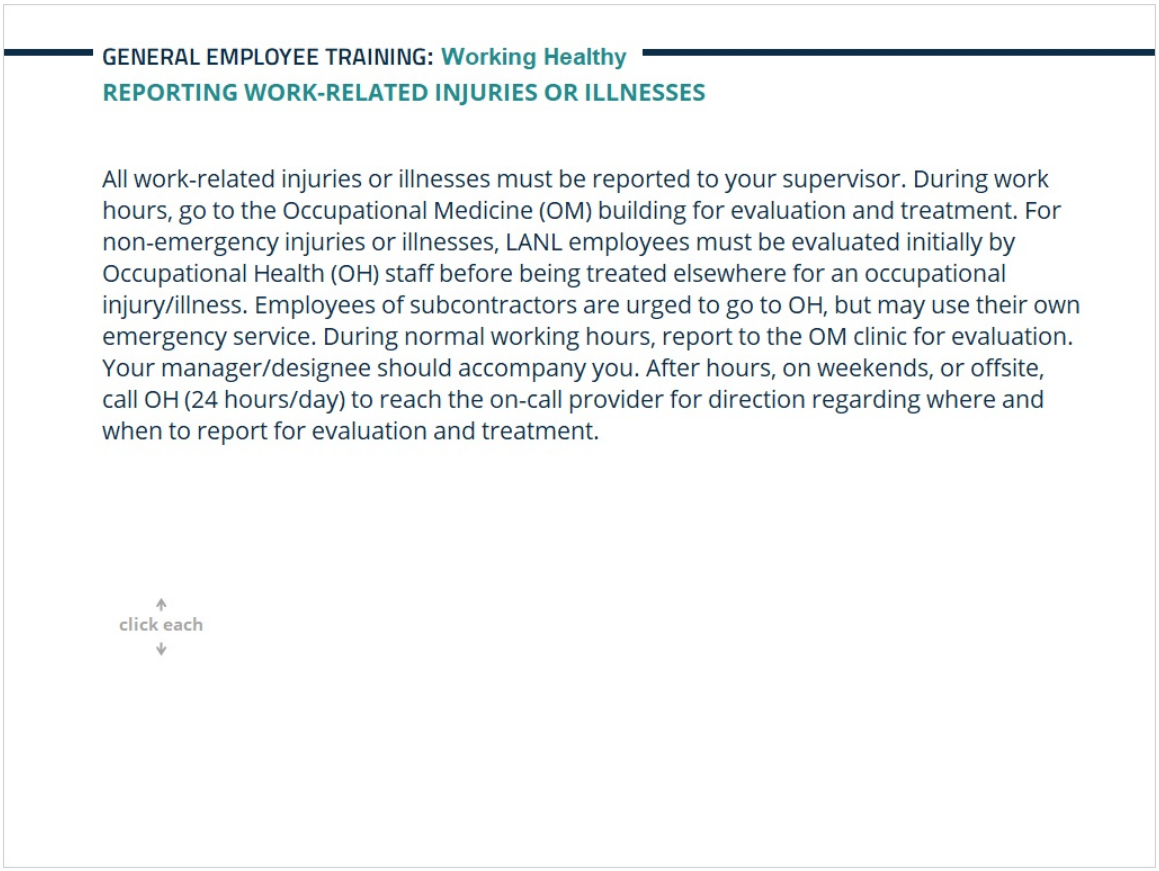
fitness for duty (Slide Layer)



3.7 Work-Related Injuries & Illnesses



3.8 Reporting Injuries & Illnesses



911 (Slide Layer)

GENERAL EMPLOYEE TRAINING: Working Healthy

REPORTING WORK-RELATED INJURIES OR ILLNESSES

All work-related injuries or illnesses must be reported to your supervisor. During work hours, go to the Occupational Medicine (OM) building for evaluation and treatment. For non-emergency injuries or illnesses, LANL employees must be evaluated initially by Occupational Health (OH) staff before being treated elsewhere for an occupational injury/illness. Employees of subcontractors are urged to go to OH, but may use their own emergency service. During normal working hours, report to the OM clinic for evaluation. Your manager/designee should accompany you. After hours, on weekends, or offsite, call OH (24 hours/day) to reach the on-call provider for direction regarding where and when to report for evaluation and treatment.

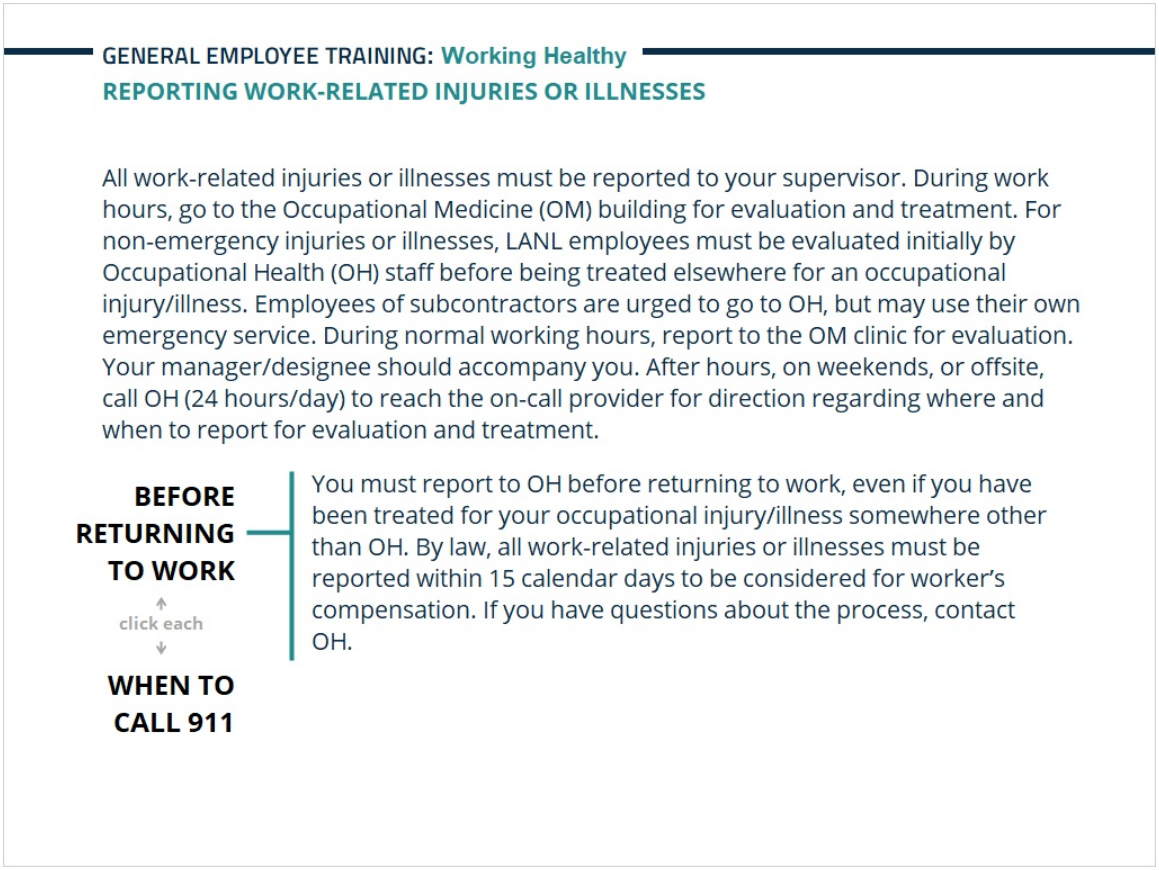
BEFORE RETURNING TO WORK

click each

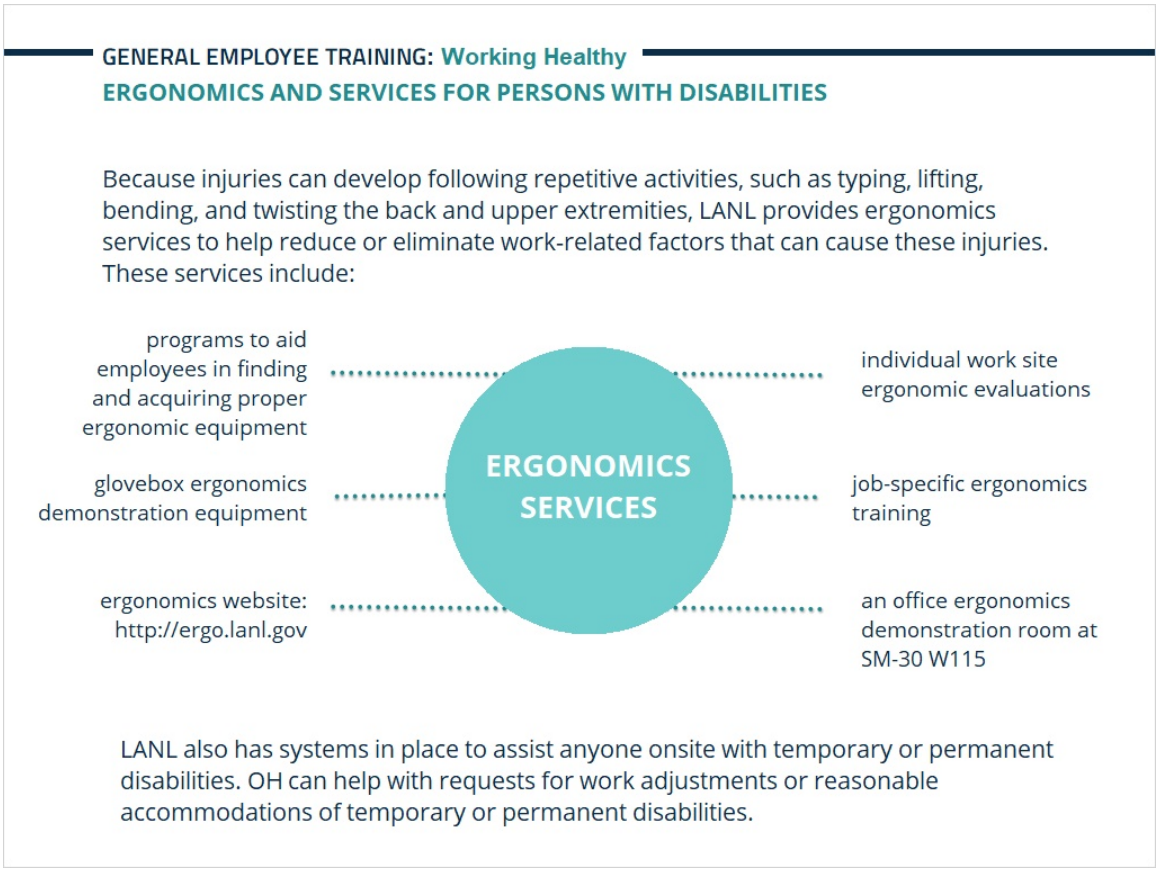
WHEN TO CALL 911

If the injury/illness is a medical emergency, call 911 immediately to get an ambulance; then notify your manager. If you are not sure if you need an ambulance or where to go for treatment, call OH for direction.

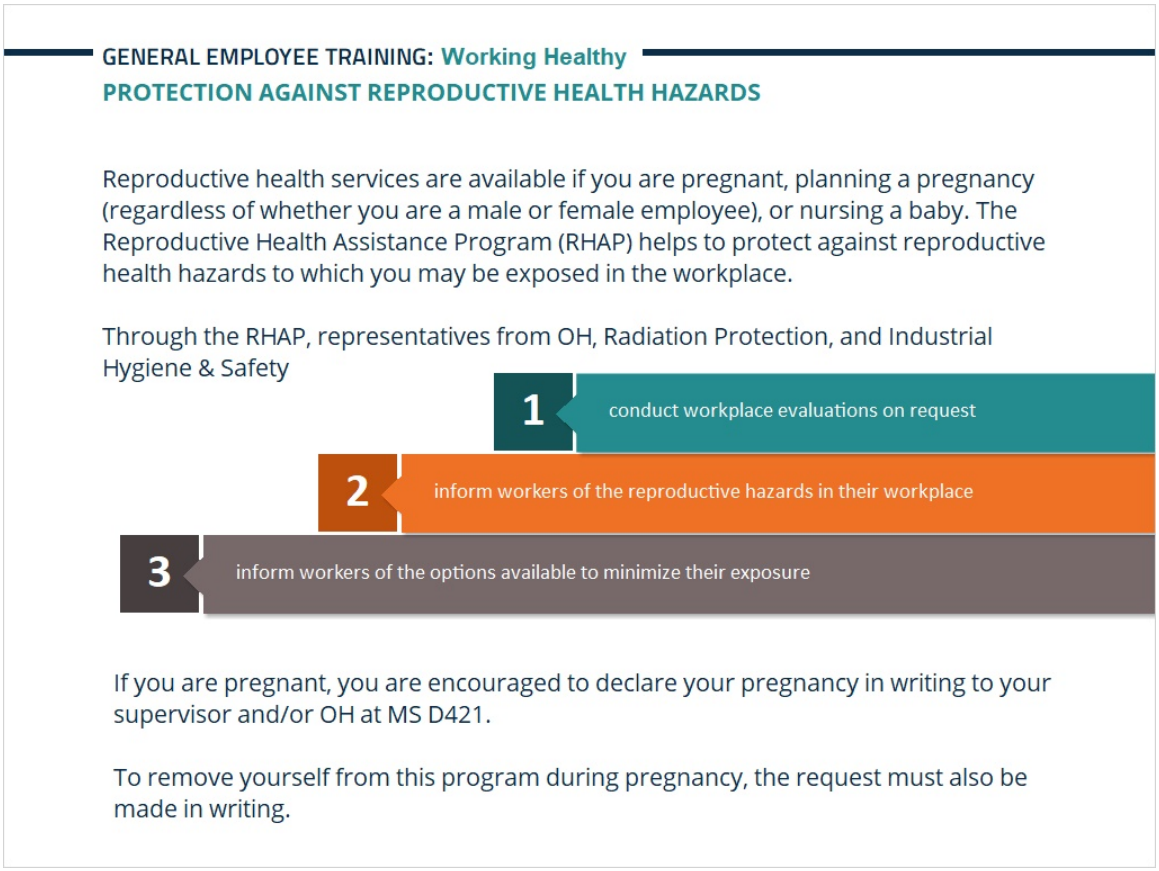
RETURN (Slide Layer)



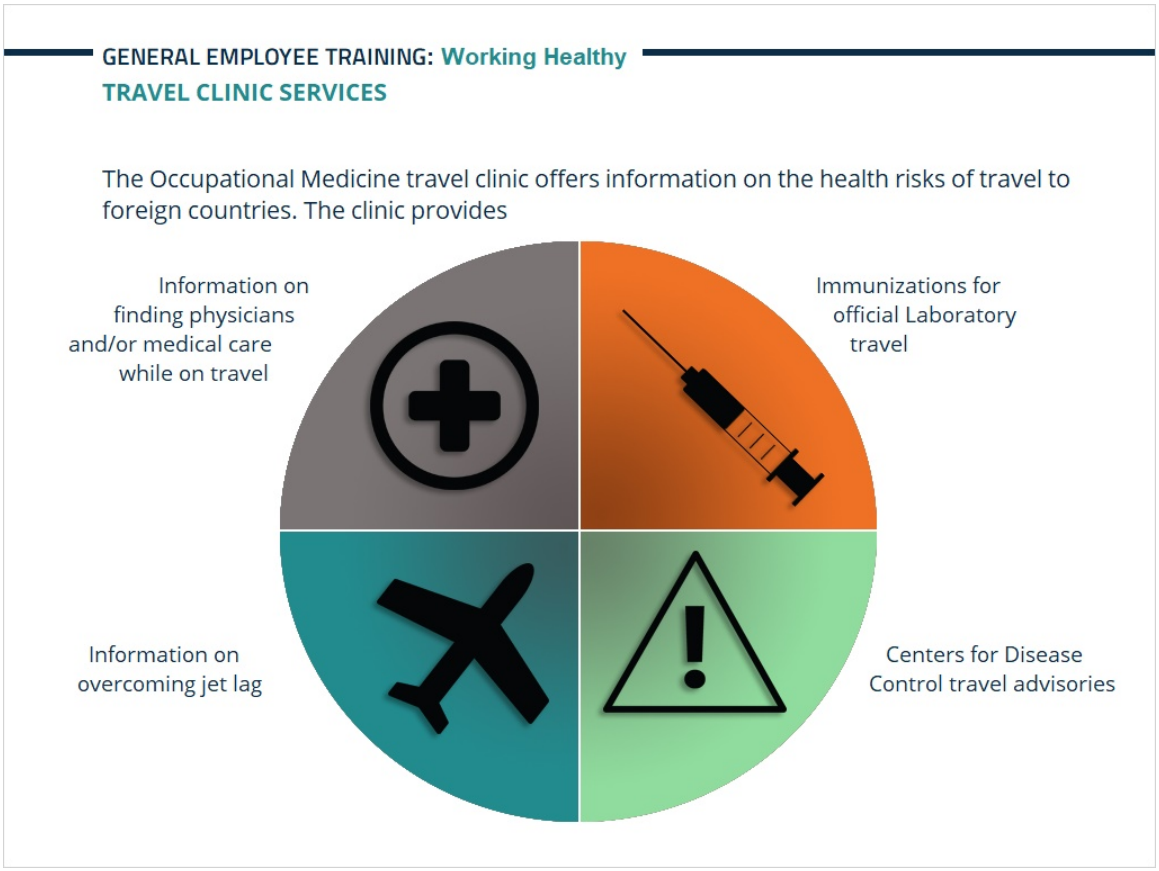
3.9 Ergonomics



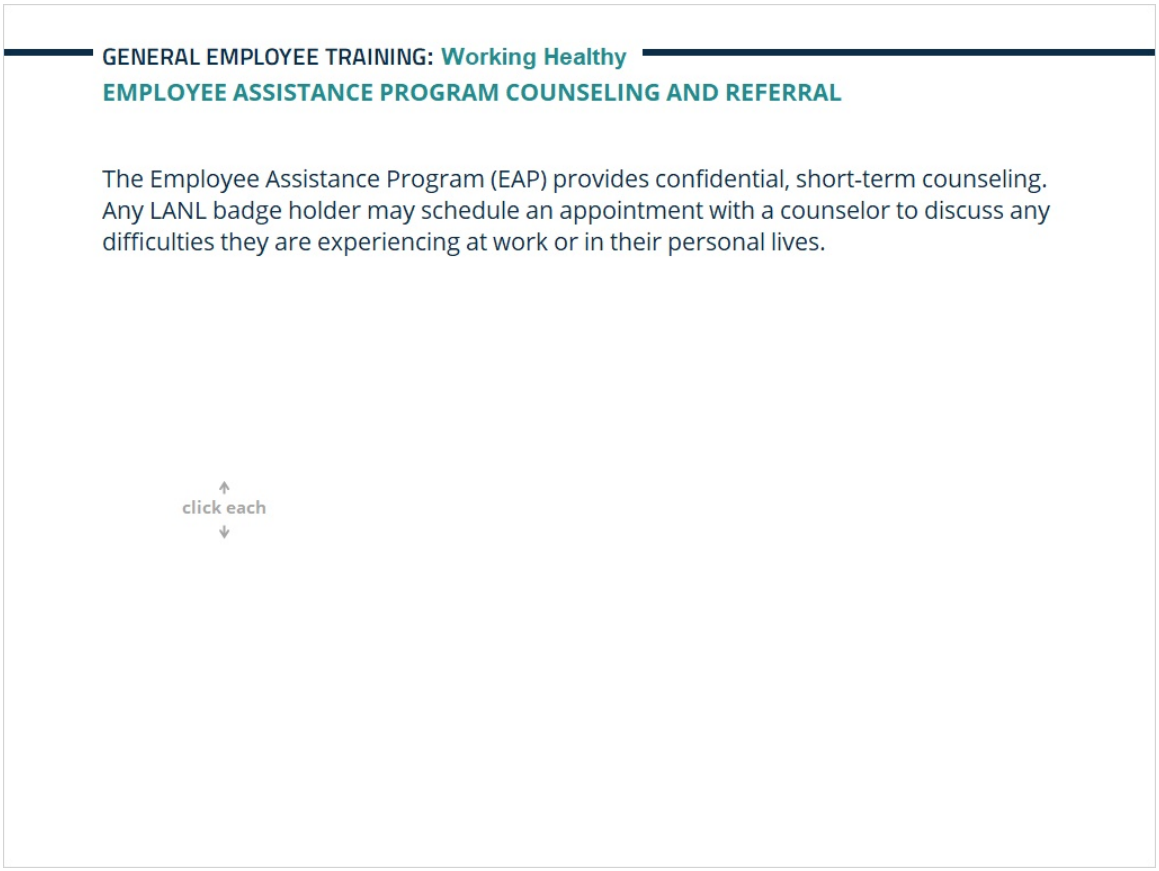
3.10 Reproductive Health



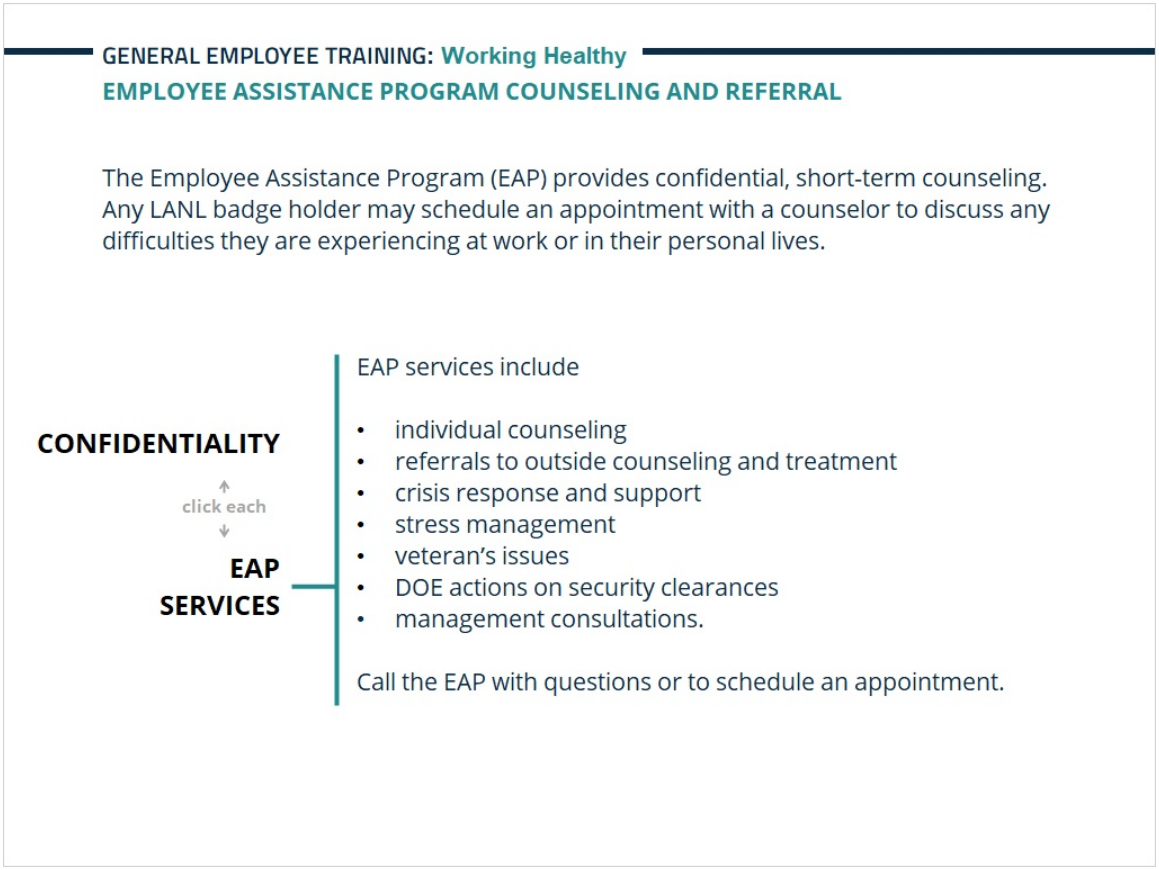
3.11 Travel Clinic Services



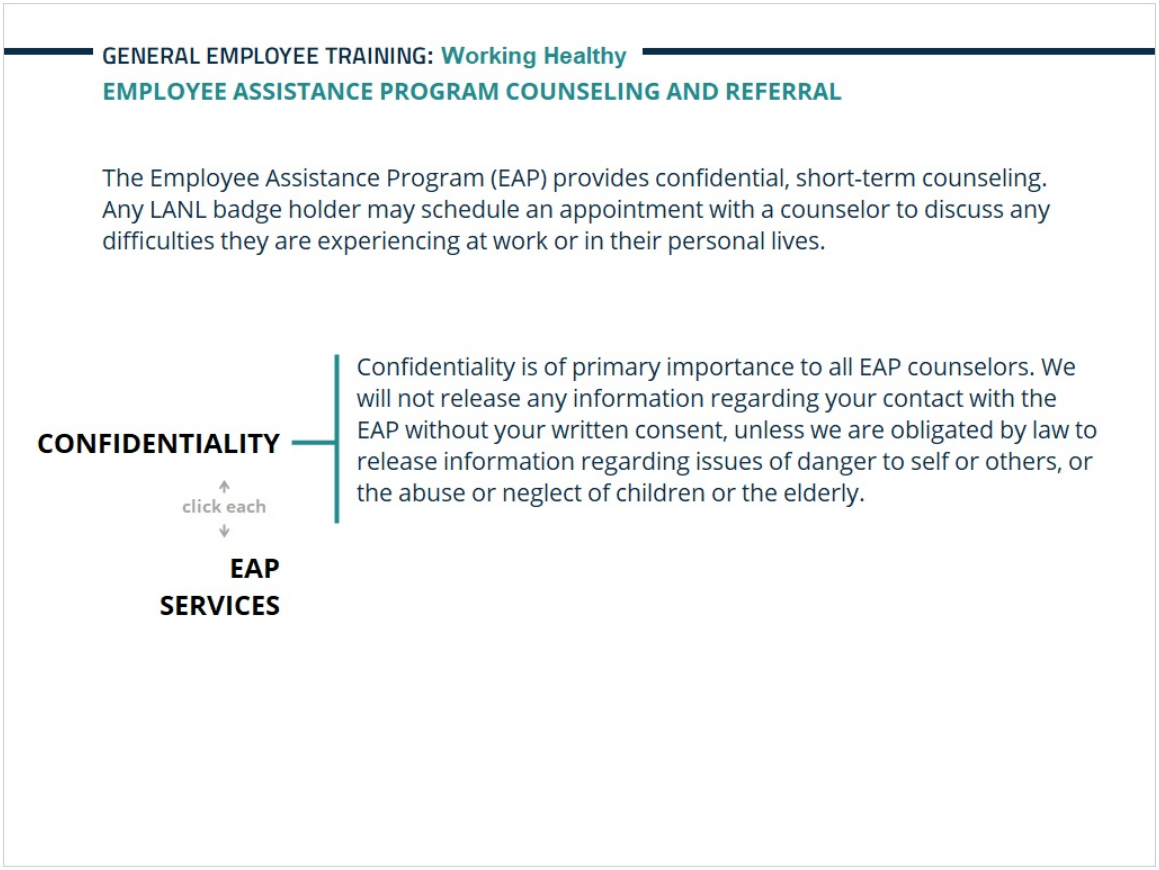
3.12 EAP


GENERAL EMPLOYEE TRAINING: Working Healthy
EMPLOYEE ASSISTANCE PROGRAM COUNSELING AND REFERRAL
The Employee Assistance Program (EAP) provides confidential, short-term counseling. Any LANL badge holder may schedule an appointment with a counselor to discuss any difficulties they are experiencing at work or in their personal lives.
click each

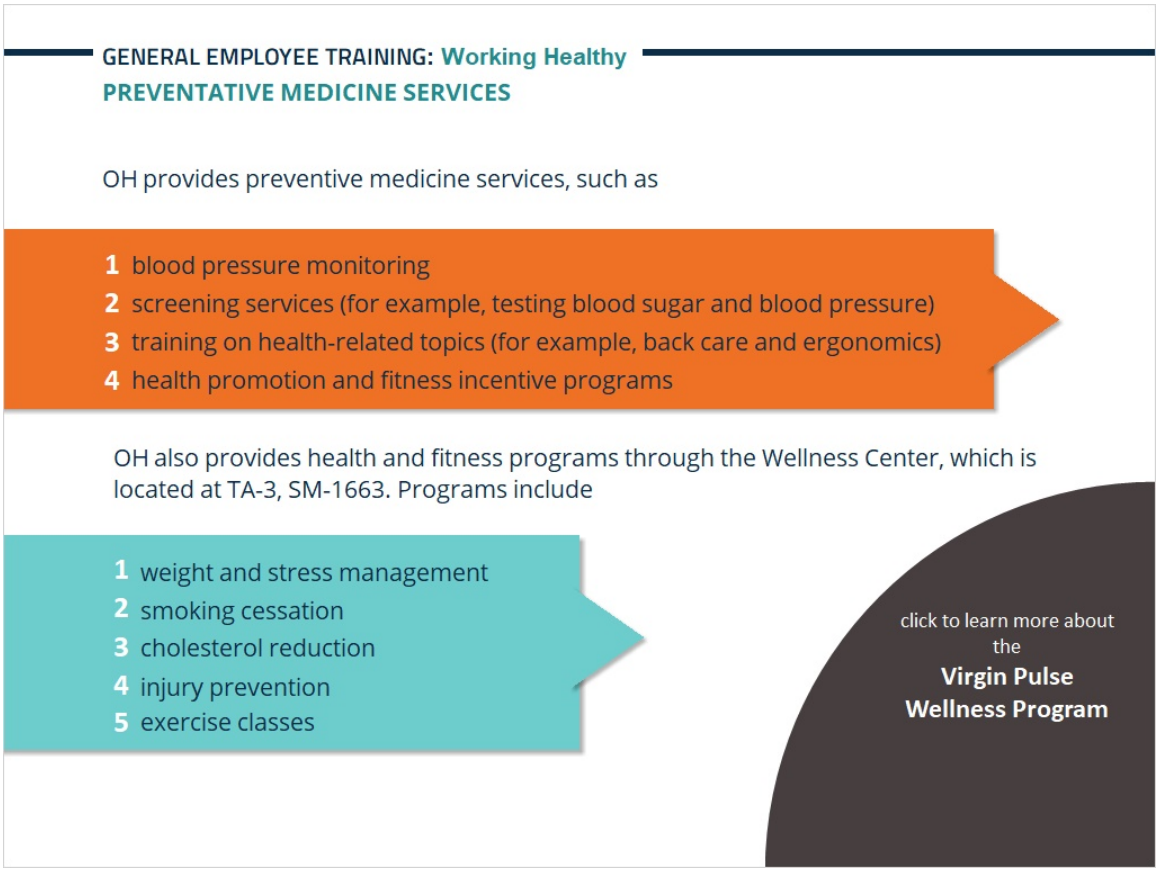
EAP Services (Slide Layer)



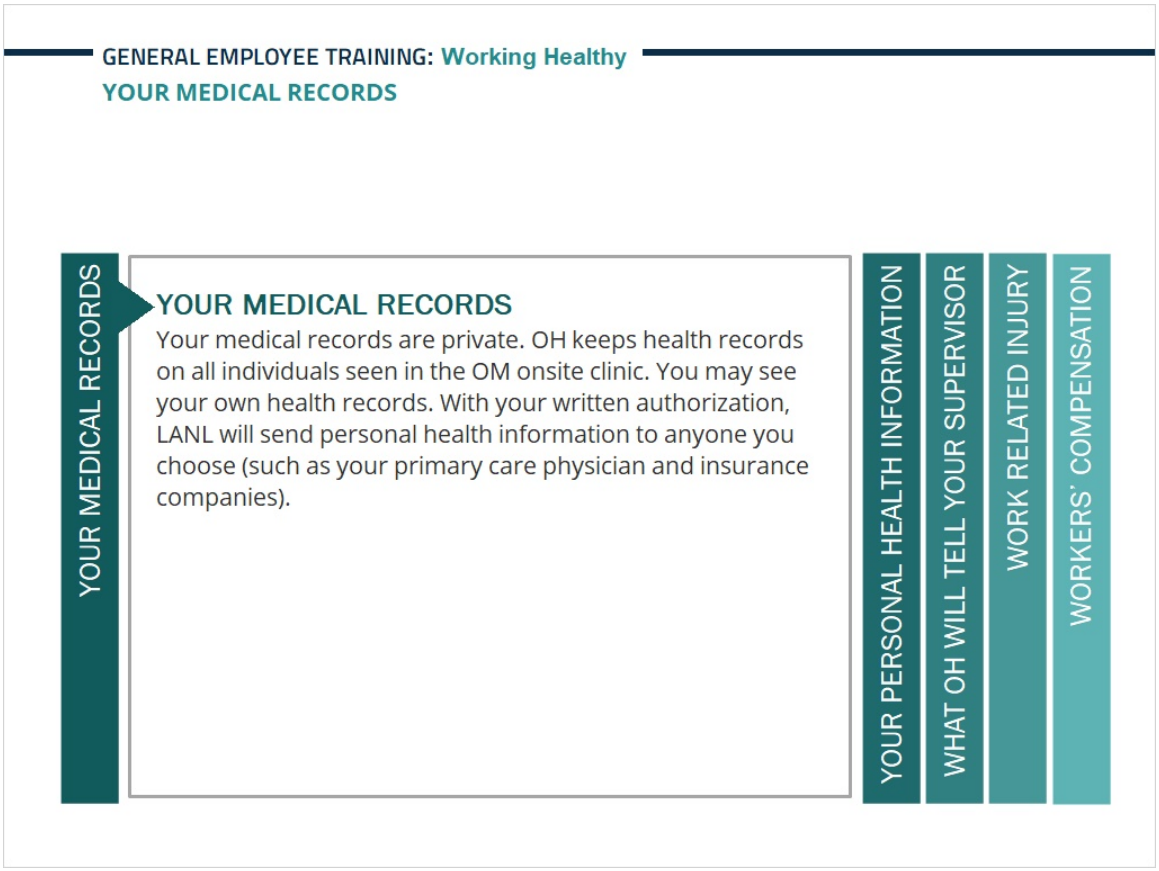
confidentiality (Slide Layer)



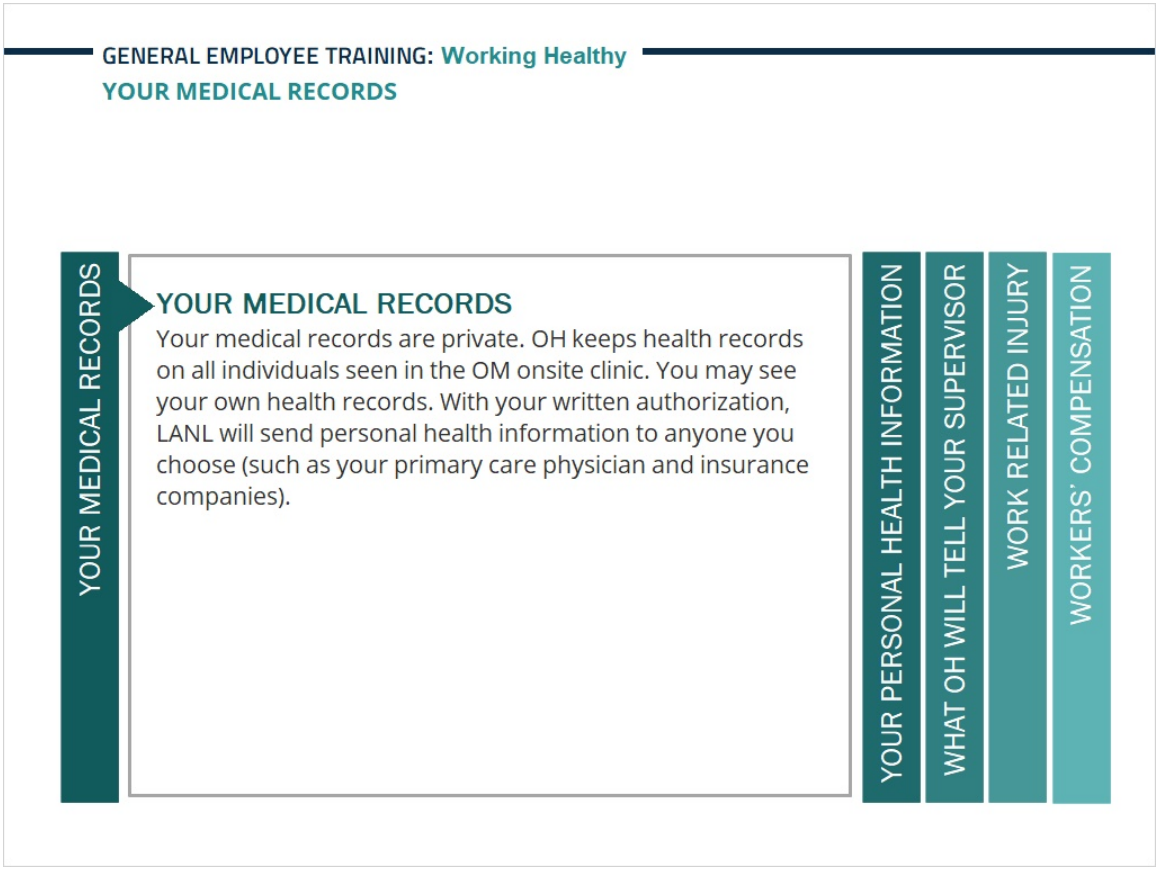
3.13 Preventative Medicine



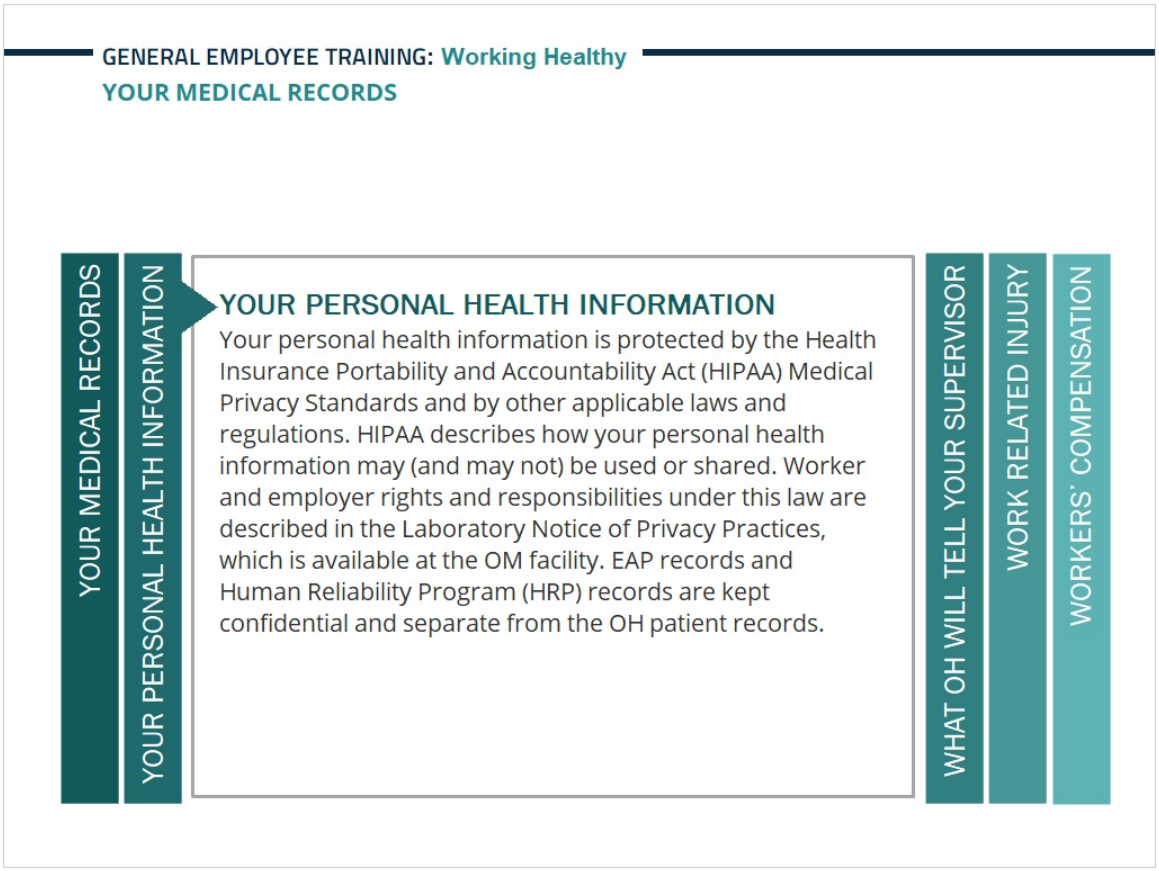
3.14 Your Medical Records



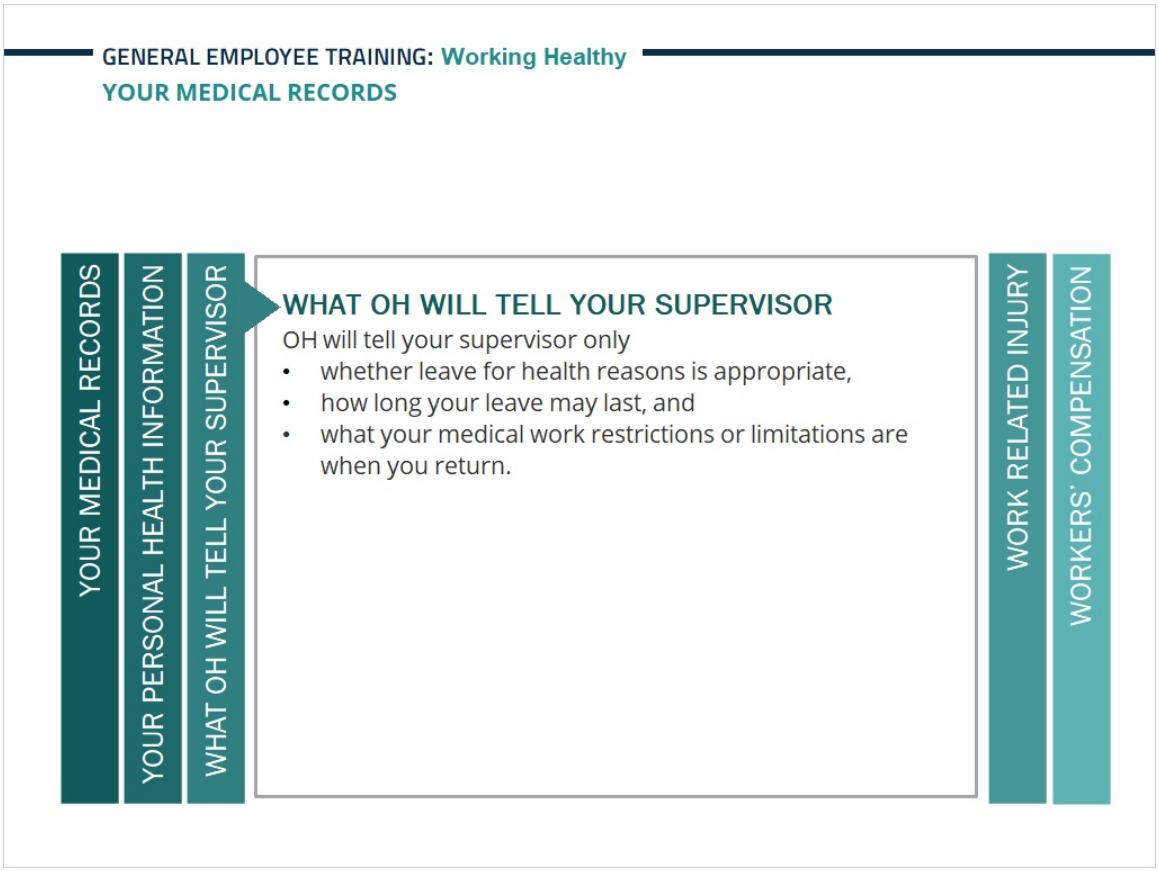
medical records (Slide Layer)



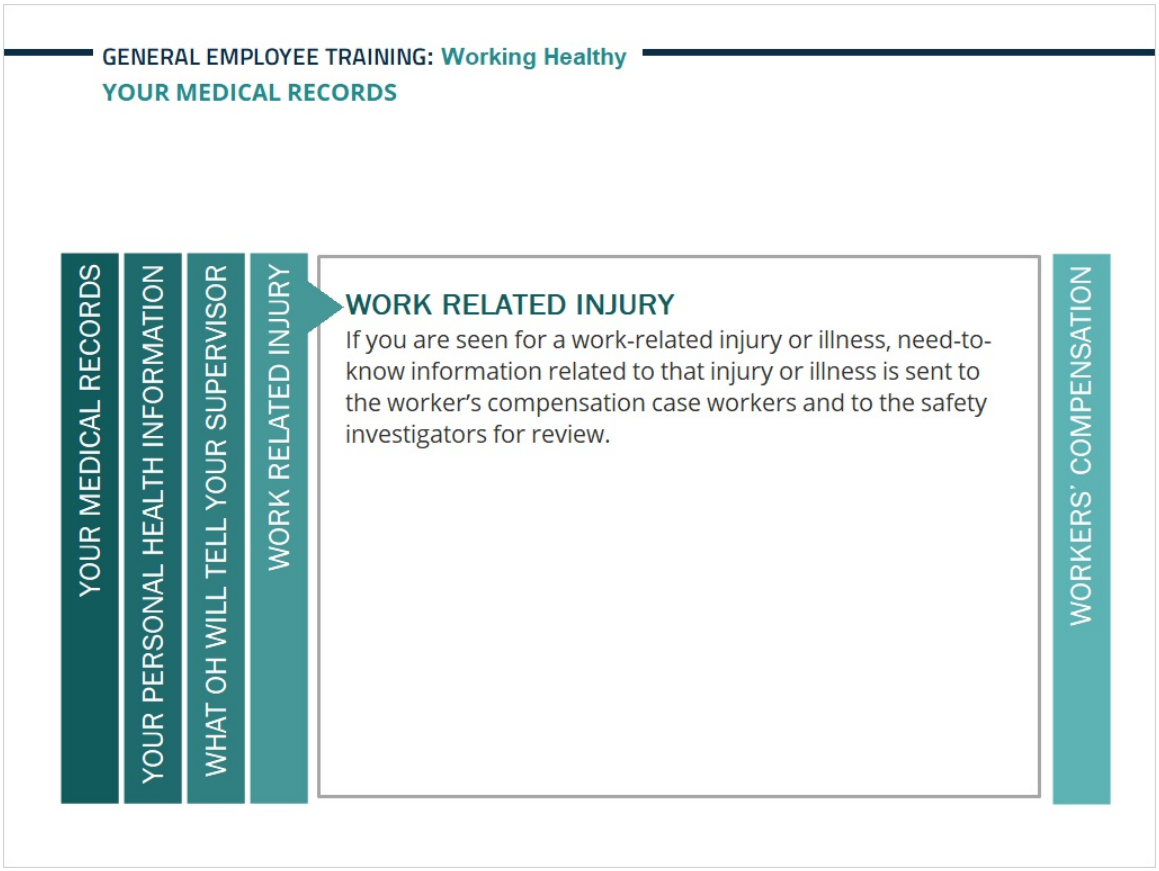
3.15 Your Medical Records



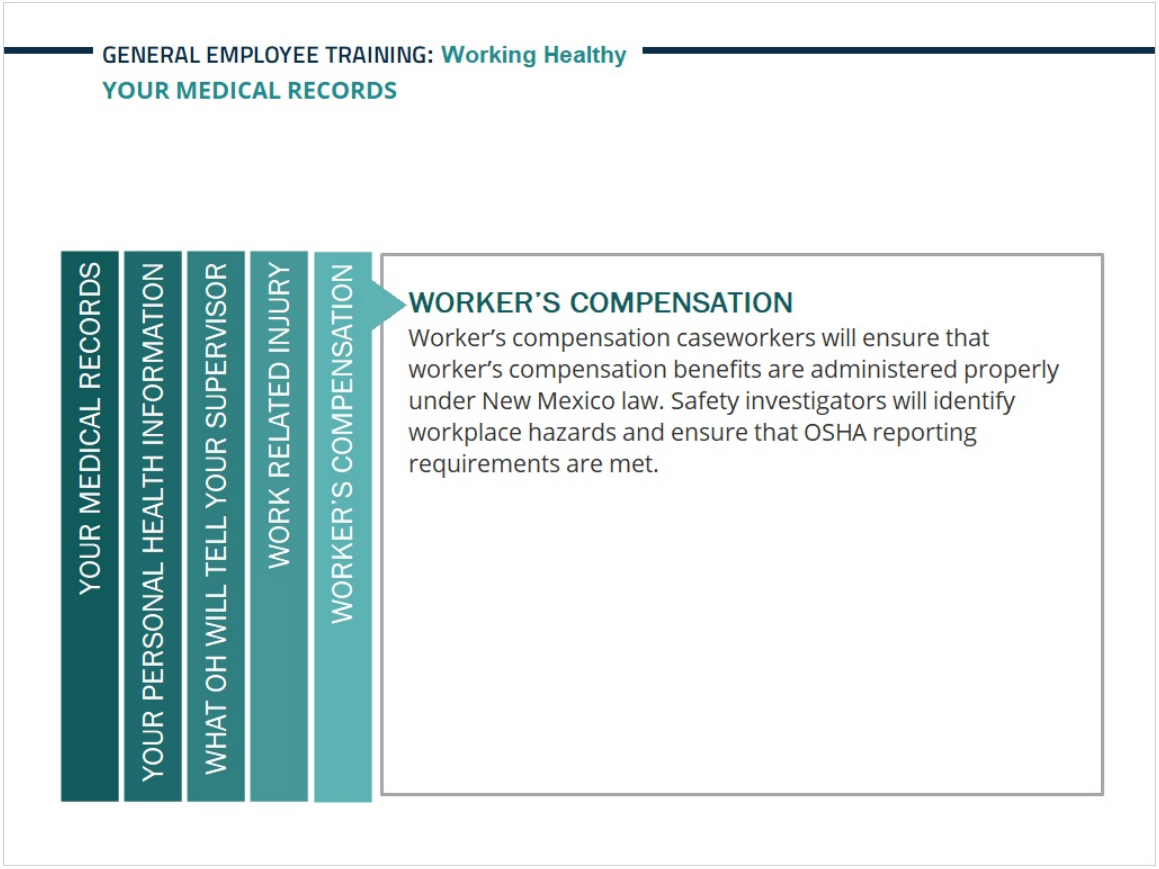
3.16 Your Medical Records



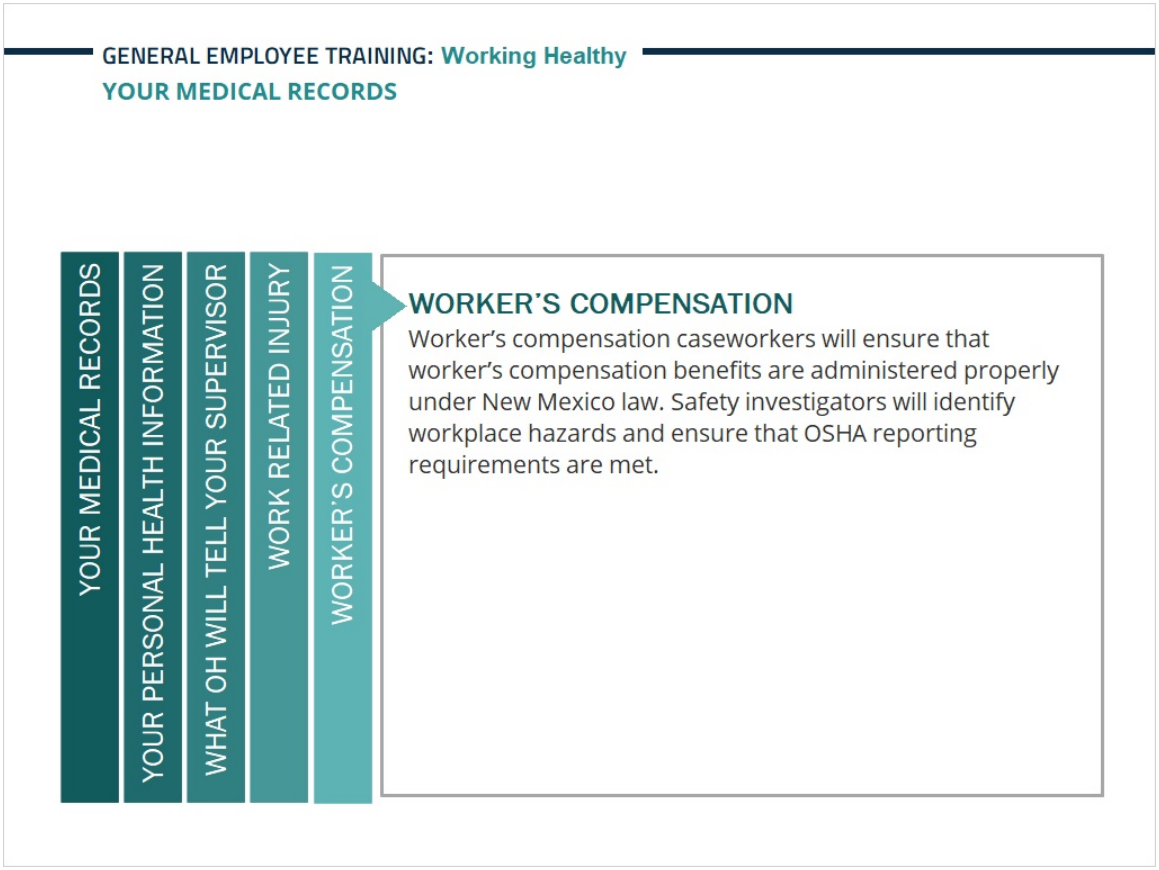
3.17 Your Medical Records



3.18 Your Medical Records



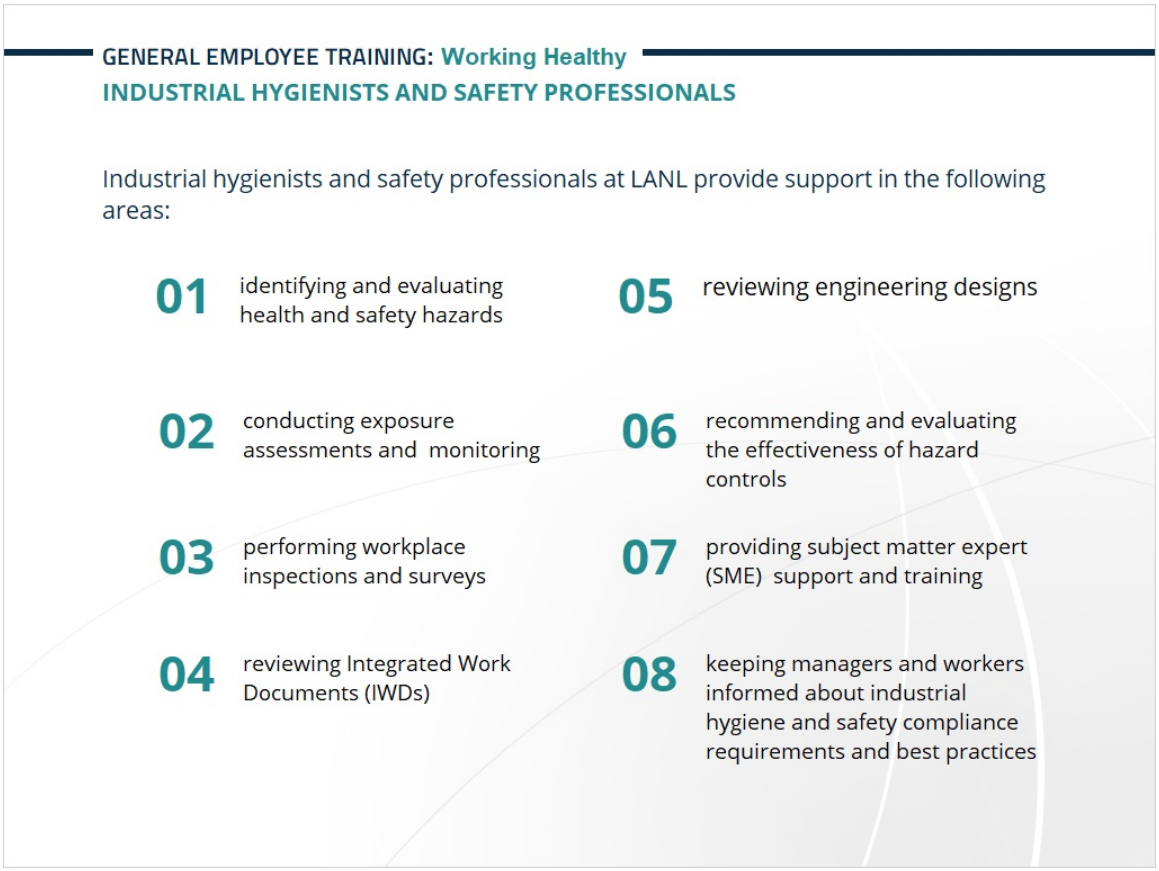
WORKERS COMP (Slide Layer)



3.19 Indurstrial Hygiene & Safety

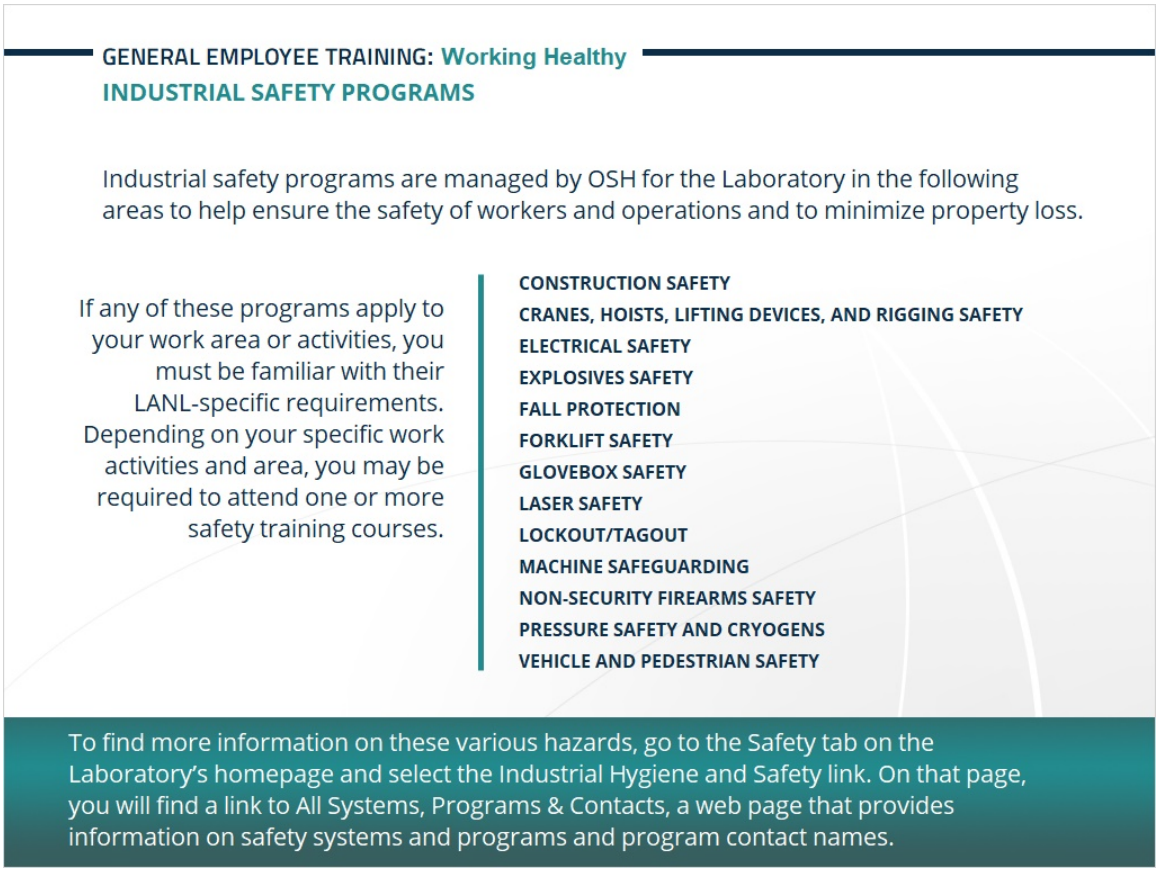
3.20 Occupational Safety & Health Organization

3.21 Hygienists & Engineers

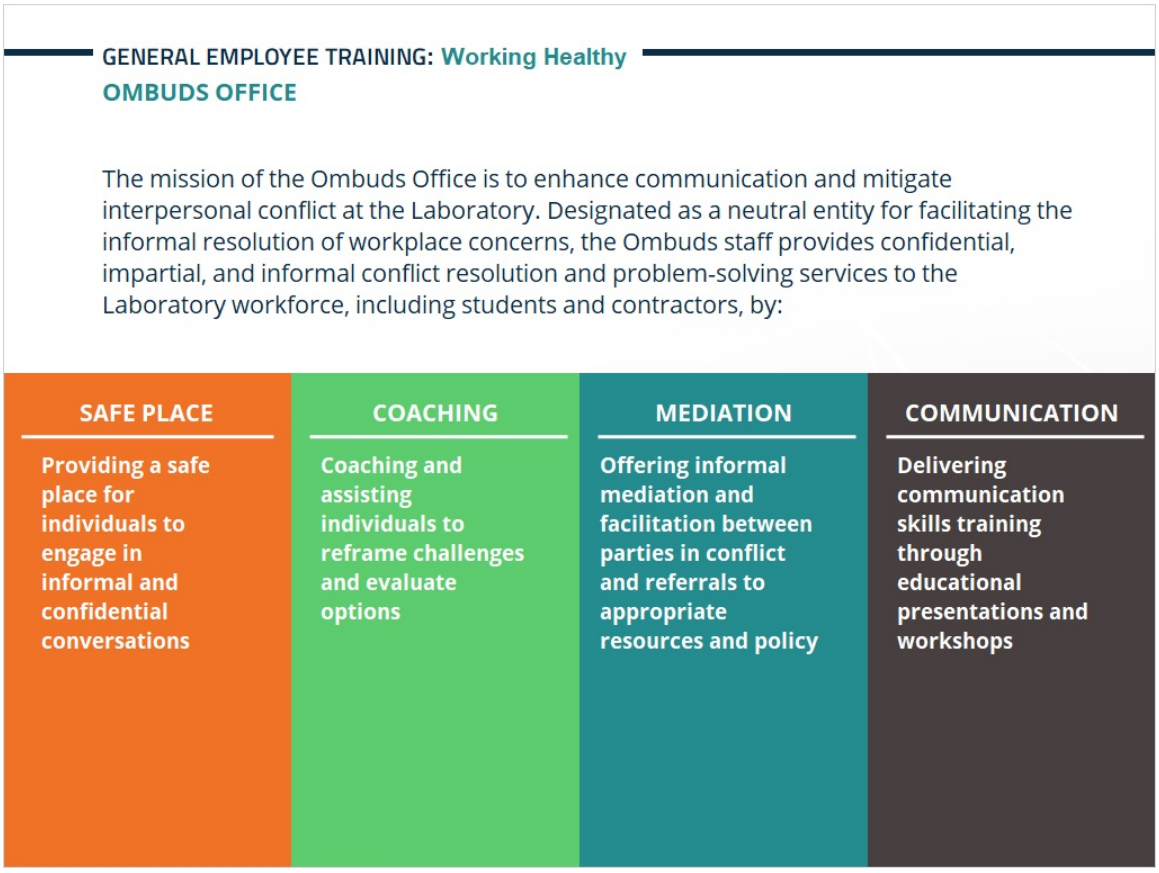


3.22 Industrial Hygiene Programs

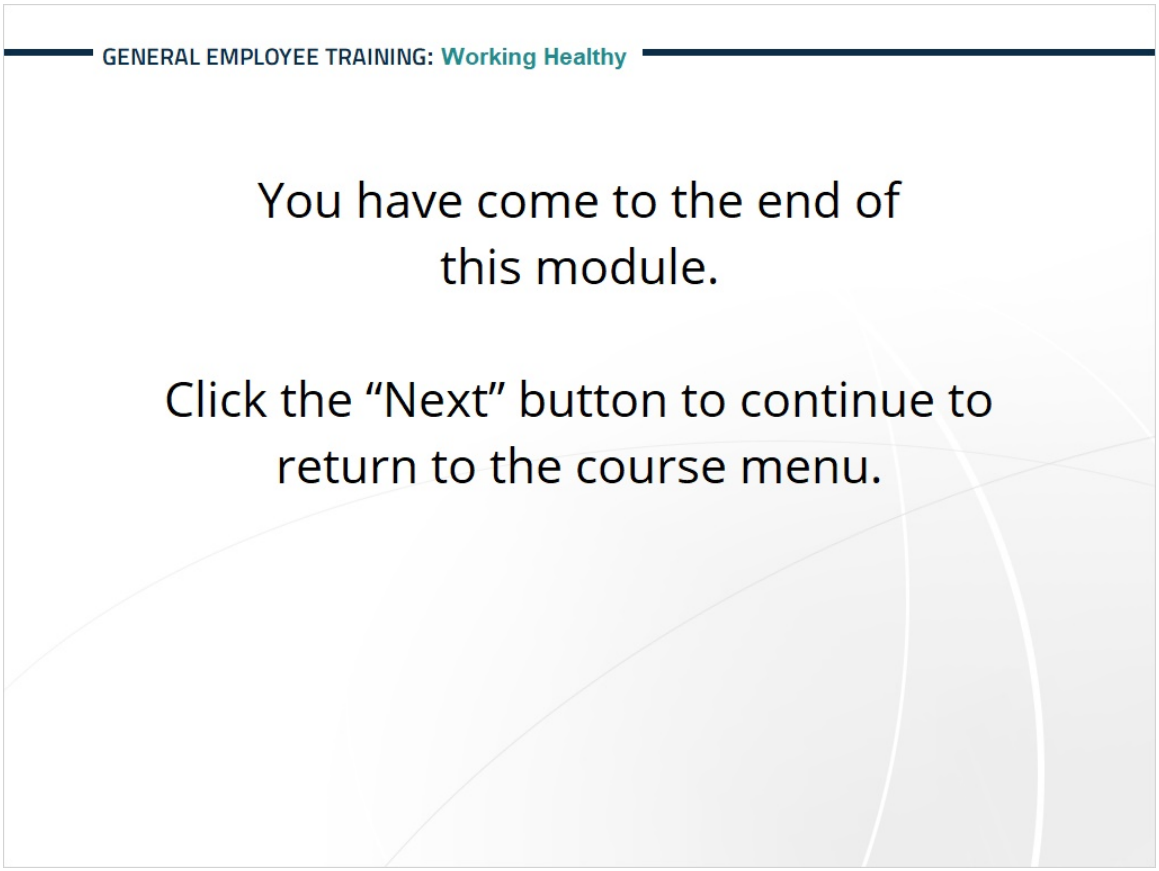
3.23 Industrial Safety Programs



3.24 OMBUDS


GENERAL EMPLOYEE TRAINING: Working Healthy
OMBUDS OFFICE
The mission of the Ombuds Office is to enhance communication and mitigate interpersonal conflict at the Laboratory. Designated as a neutral entity for facilitating the informal resolution of workplace concerns, the Ombuds staff provides confidential, impartial, and informal conflict resolution and problem-solving services to the Laboratory workforce, including students and contractors, by:
SAFE PLACE
Providing a safe place for individuals to engage in informal and confidential conversations
COACHING
Coaching and assisting individuals to reframe challenges and evaluate options
MEDIATION
Offering informal mediation and facilitation between parties in conflict and referrals to appropriate resources and policy
COMMUNICATION
Delivering communication skills training through educational presentations and workshops

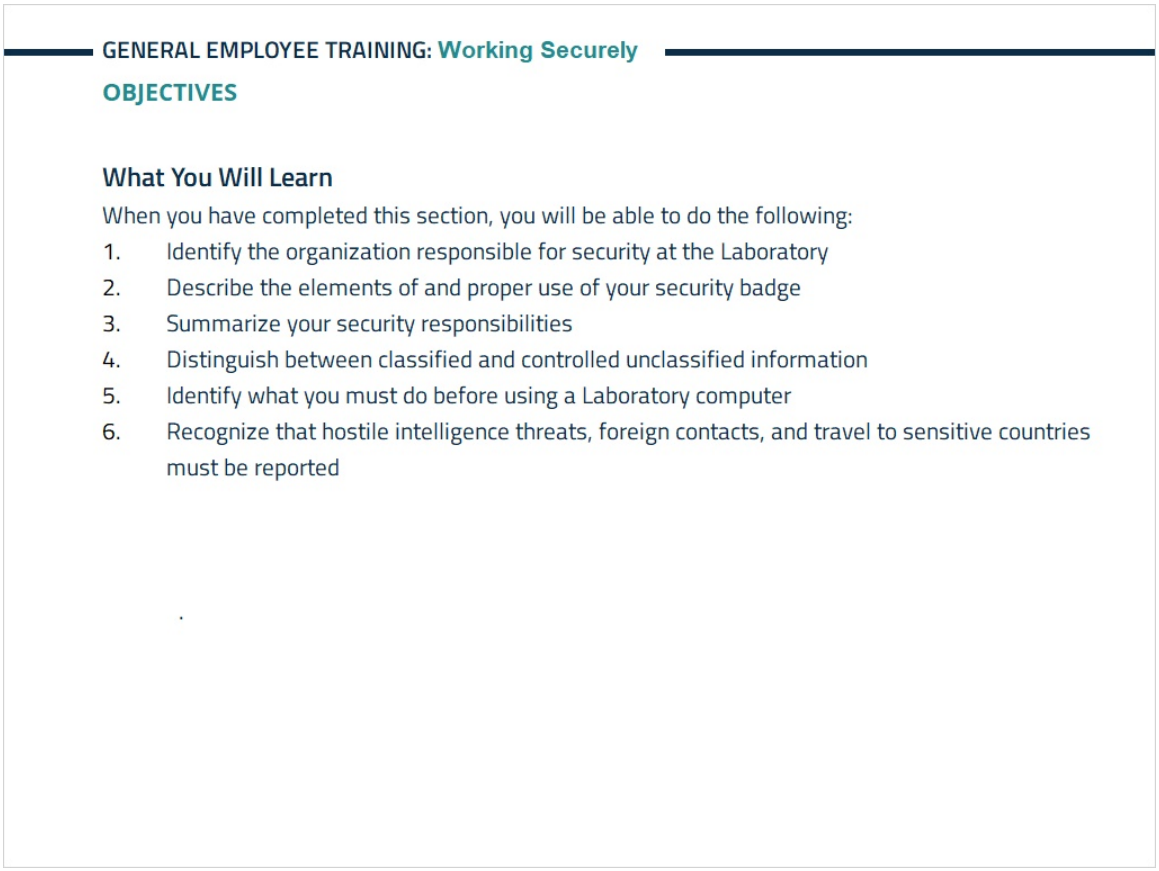
3.25 What Lies Ahead



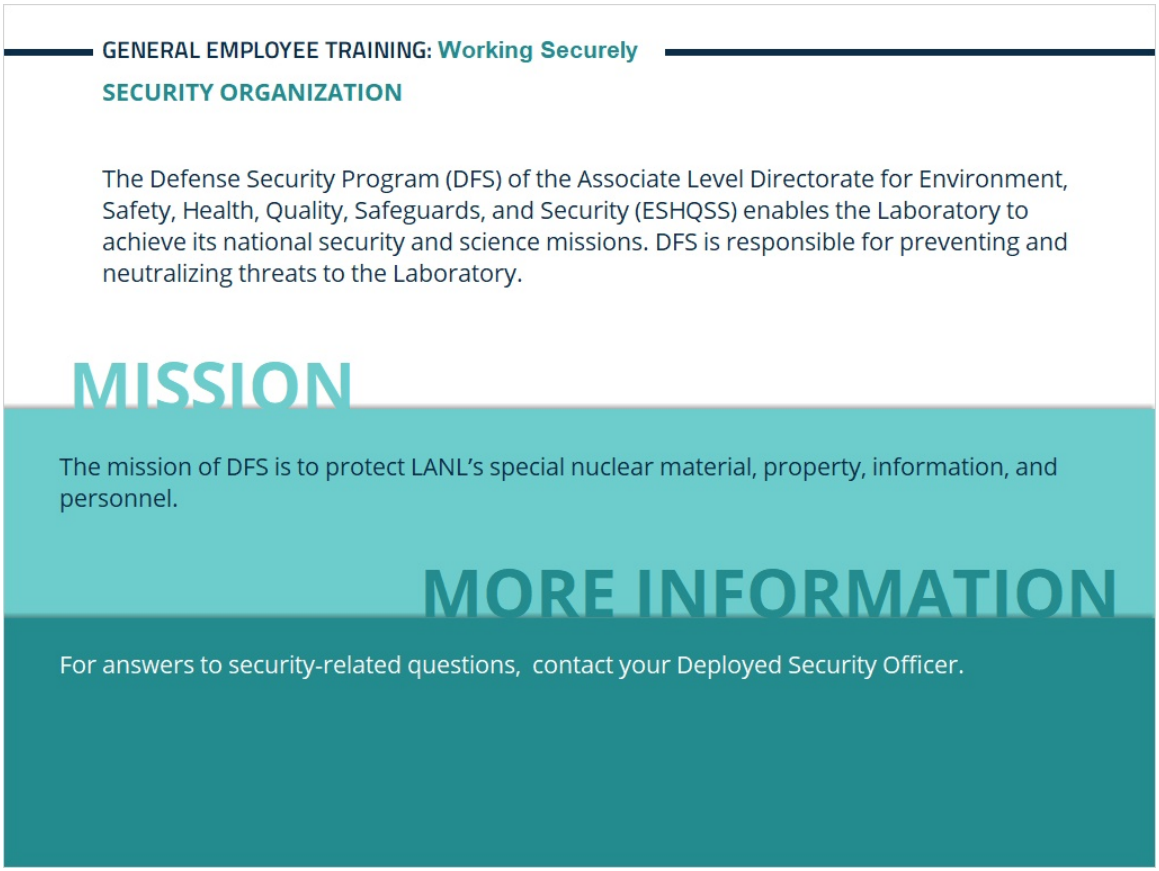
4. Working Securely

4.1 Introduction

4.2 Objectives



4.3 Security Organization



4.4 Nuclear Material Control and Accountability

GENERAL EMPLOYEE TRAINING: **Working Securely**

SAFEGUARDING NUCLEAR MATERIAL

The Laboratory actively protects our nation against nuclear threats. DOE and the Laboratory's Nuclear Material Control and Accountability (NMCA) program are designed to detect and deter the theft and diversion of accountable nuclear material and special nuclear material.

4.5 Lab Protective Force

GENERAL EMPLOYEE TRAINING: **Working Securely**

LABORATORY PROTECTIVE FORCE

One of the most visible elements of the DFS is a Protective Force (PF) that provides security services to the Laboratory. Hired as a subcontractor organization, the PF officers provide physical security for facilities, fixed and roving security patrols, access control and vehicle inspections, and security emergency response.

Security Services and Equipment

PF officers can be seen wearing military-style uniforms and tactical vests, operating military vehicles, and carrying a wide variety of equipment, including radios and weapons. All PF officers are authorized to carry cell phones, pagers, and tactical radios.

4.6 Lab Protective Force

GENERAL EMPLOYEE TRAINING: Working Securely

LABORATORY PROTECTIVE FORCE

Laboratory Canine Teams

The Laboratory additionally has canine teams hired as a subcontractor organization, to deter and detect potential threats. Canine dogs and their handlers may be involved in activities such as explosive detections, suspect apprehension, and contraband searches. Arguing and/or interfering with the canine/handler is not tolerated.

Personal and Vehicle Inspections

All vehicles and personnel on Laboratory property are subject to random personal and vehicle inspections by PF personnel and/or canine teams.

For more information go to LANL's homepage and search the Defense Security Program.

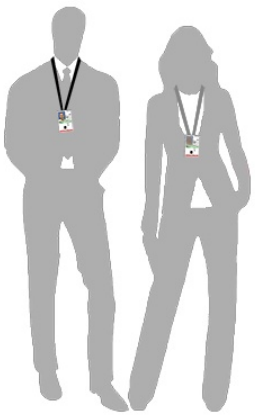
4.7 Lab Protective Force

4.8 Your Security Badge

GENERAL EMPLOYEE TRAINING: **Working Securely**

YOUR SECURITY BADGE

All workers at the Laboratory are issued security badges before reporting to work. This badge serves as your official identification for government work and allows (or restricts) your access to certain areas of the Laboratory.



Wear your badge at all times while on Laboratory-owned or -leased property. Do not wear your badge when off Laboratory property, and do not leave your badge where it might be stolen.

Wear your badge above the waist, on the front side of your body, with the photograph visible.

Do not use your badge for unofficial identification, such as for cashing checks. (You may use your badge off site as identification for official Laboratory purposes, but never allow anyone to make a photocopy or take a photo of your badge.)

Keep your badge safe from damage.

Remember, your badge is the property of the US government. You must return your badge to the Badge Office when you change Laboratory employers; your clearance level changes; your badge expires; or if you quit, retire, or no longer need it.

4.9 Lost or Stolen Badges

GENERAL EMPLOYEE TRAINING: Working Securely

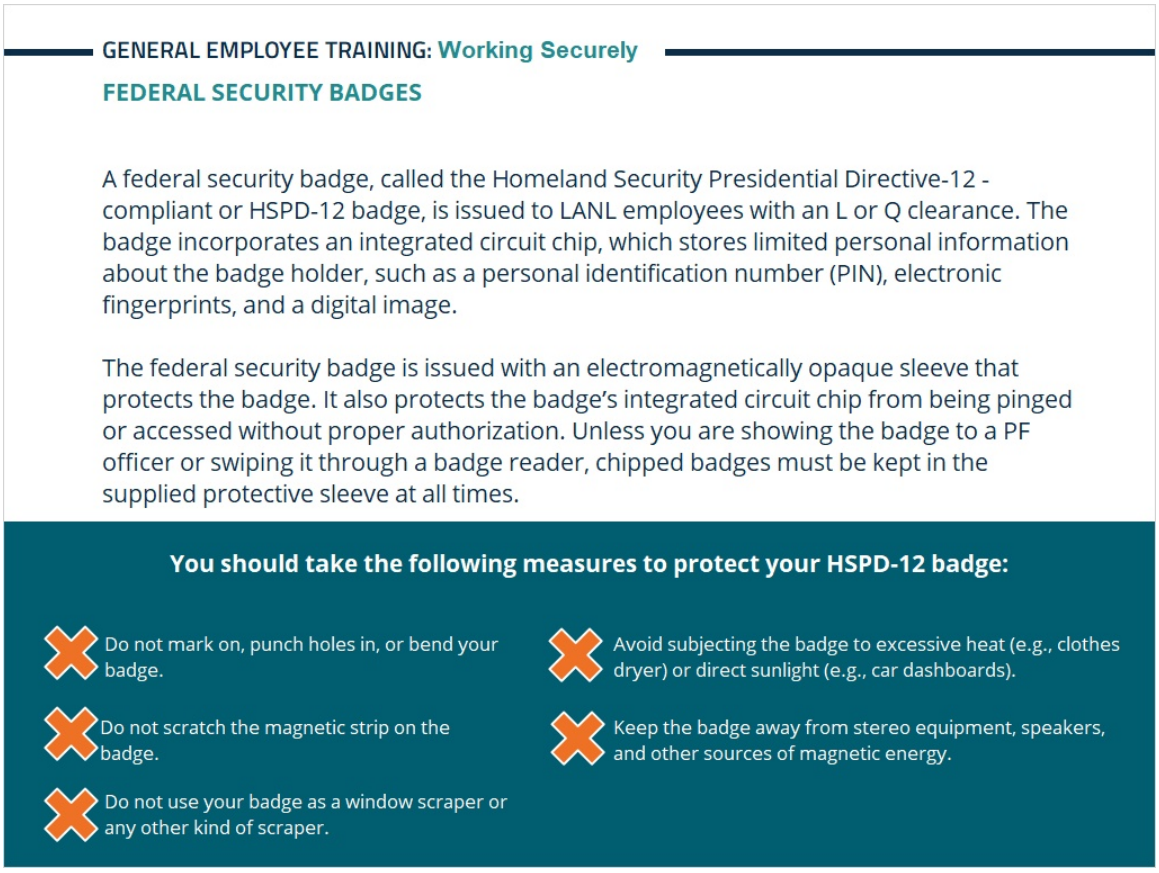
LOST OR STOLEN BADGES

If your badge is lost during work hours, report it in person to the Badge Office. If your badge has been stolen, report it immediately to the Badge Office, your deployed security officer, or the Security Incident Team. Badges reported as lost or stolen will cease working in any Laboratory badge readers, even if found. This is a permanent status change so that the badge reported lost or stolen can never be re-activated.

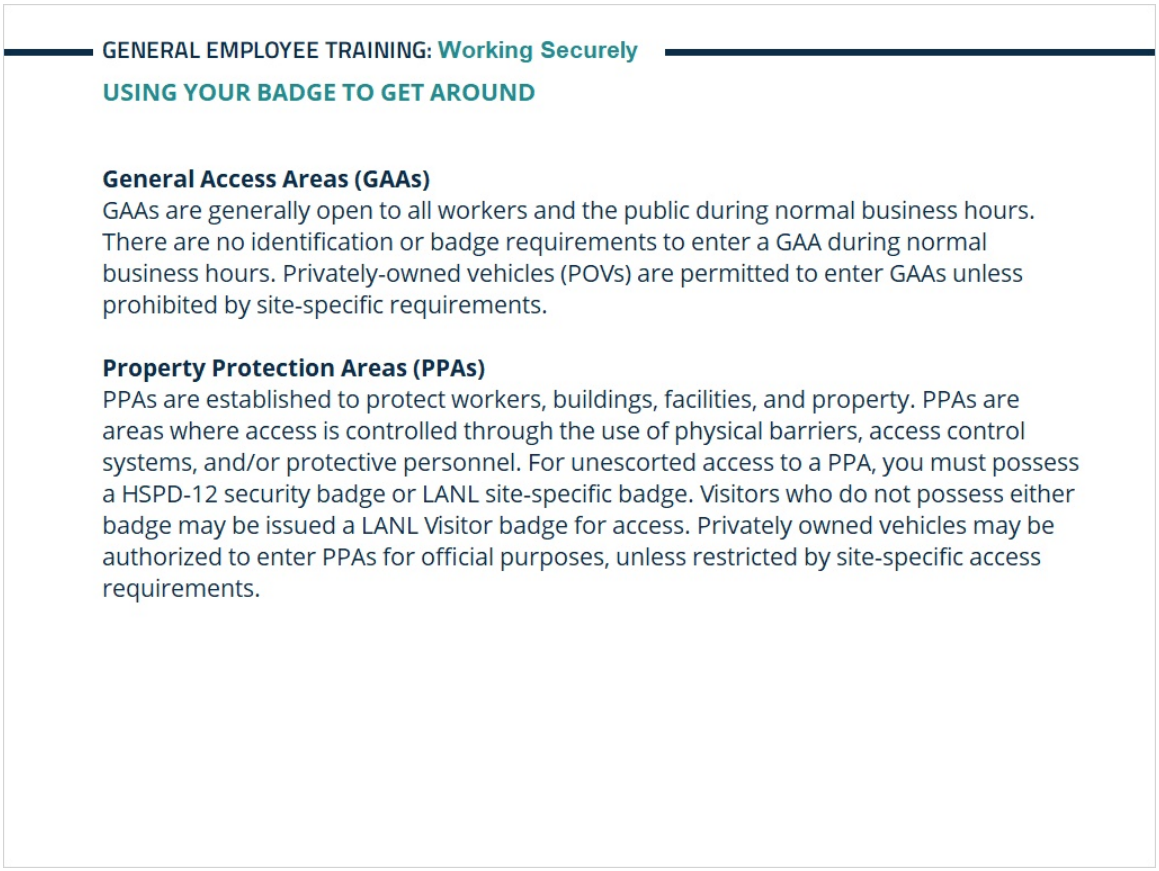
If you forget your badge, you may receive a temporary badge after presenting proper identification at the Badge Office. A temporary badge will be issued only twice in a 12 month period. Your manager's approval is required if an additional temporary badge is needed.

4.10 Types of Badges

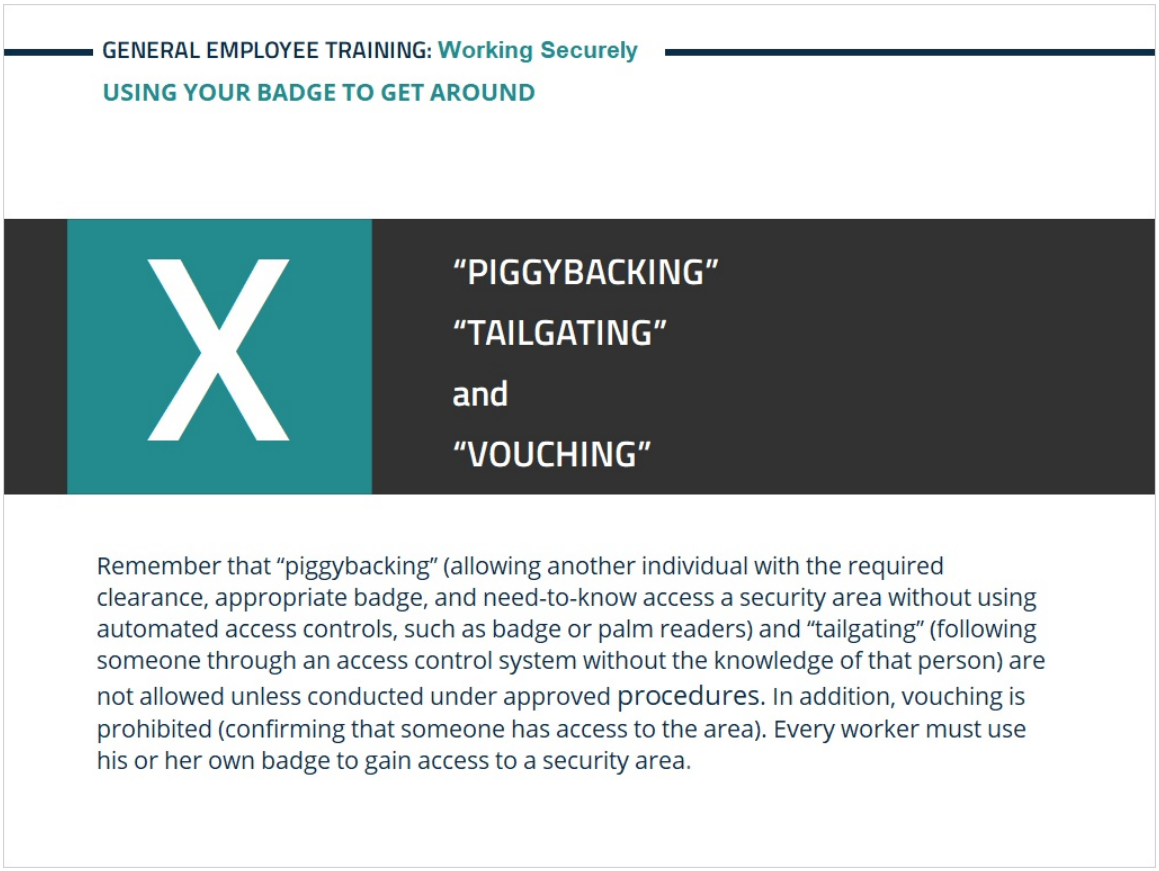
4.11 Federal Security Badge



4.12 Using Your Badge



4.13 Piggybacking, etc.

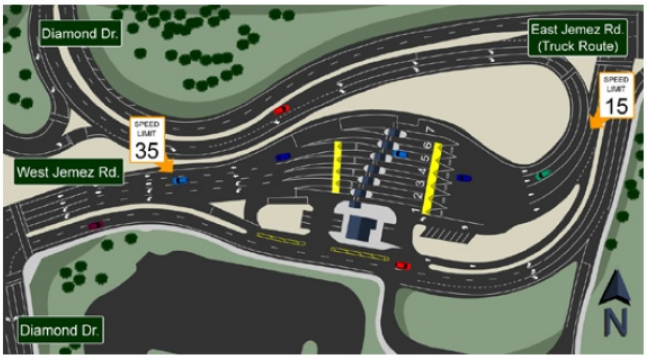


4.14 Vehicle Access Portals

GENERAL EMPLOYEE TRAINING: **Working Securely**

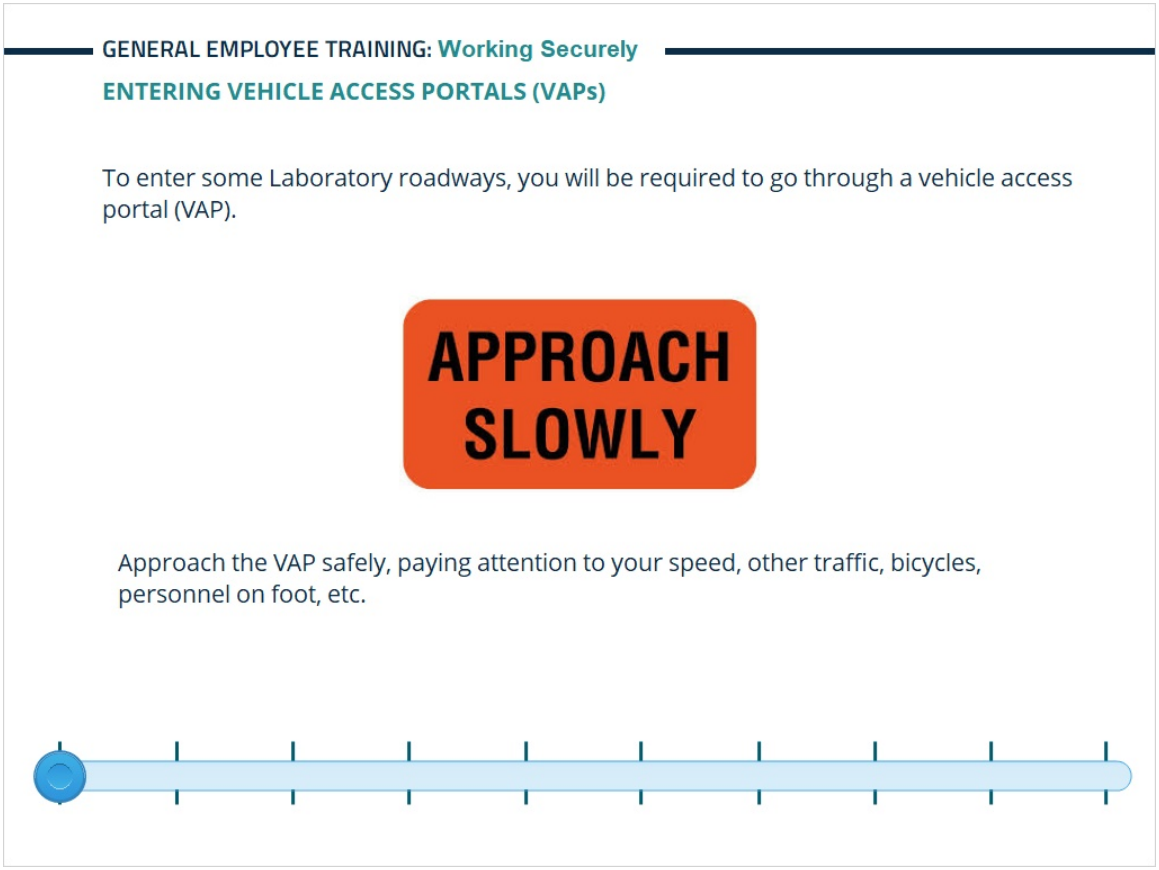
ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).



Slide to learn about vehicle access requirements:

approach (Slide Layer)



traffic lanes (Slide Layer)

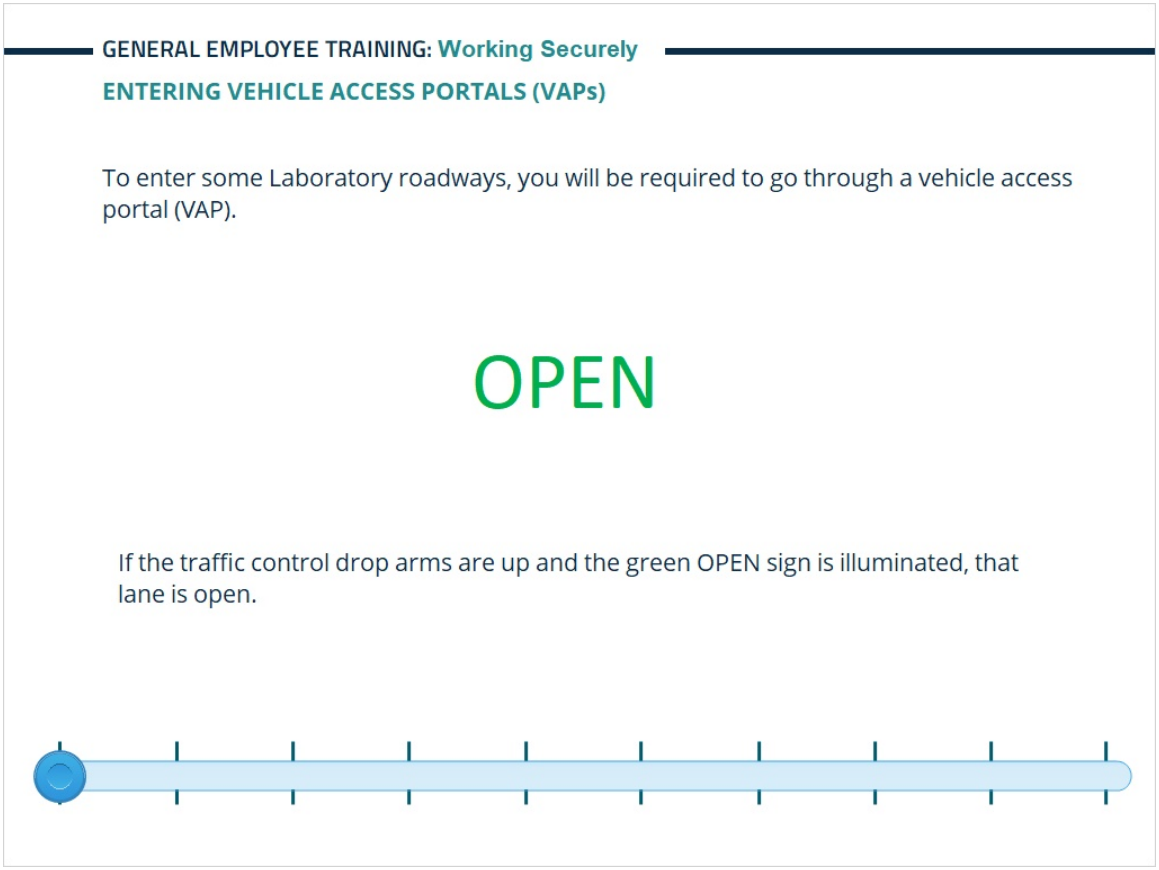
GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).

Follow the traffic lanes and instructional signs.

open (Slide Layer)

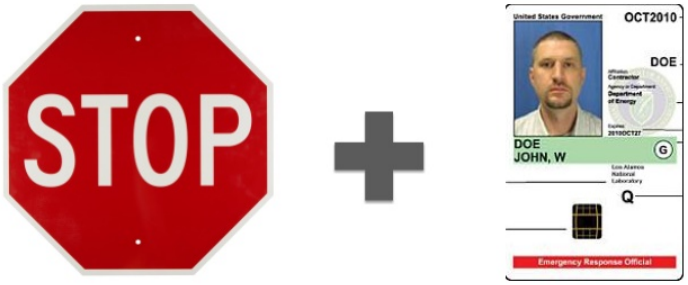


stop (Slide Layer)

GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).



All vehicles must **STOP** at the portal, and all drivers must present a badge to the officer. **DO NOT** drive through the VAP without stopping and being authorized to proceed. (If you do not stop, the PF will pursue your vehicle, stop you, inspect your vehicle, and submit an incident report, and you may be issued a security infraction.)

bicycle (Slide Layer)

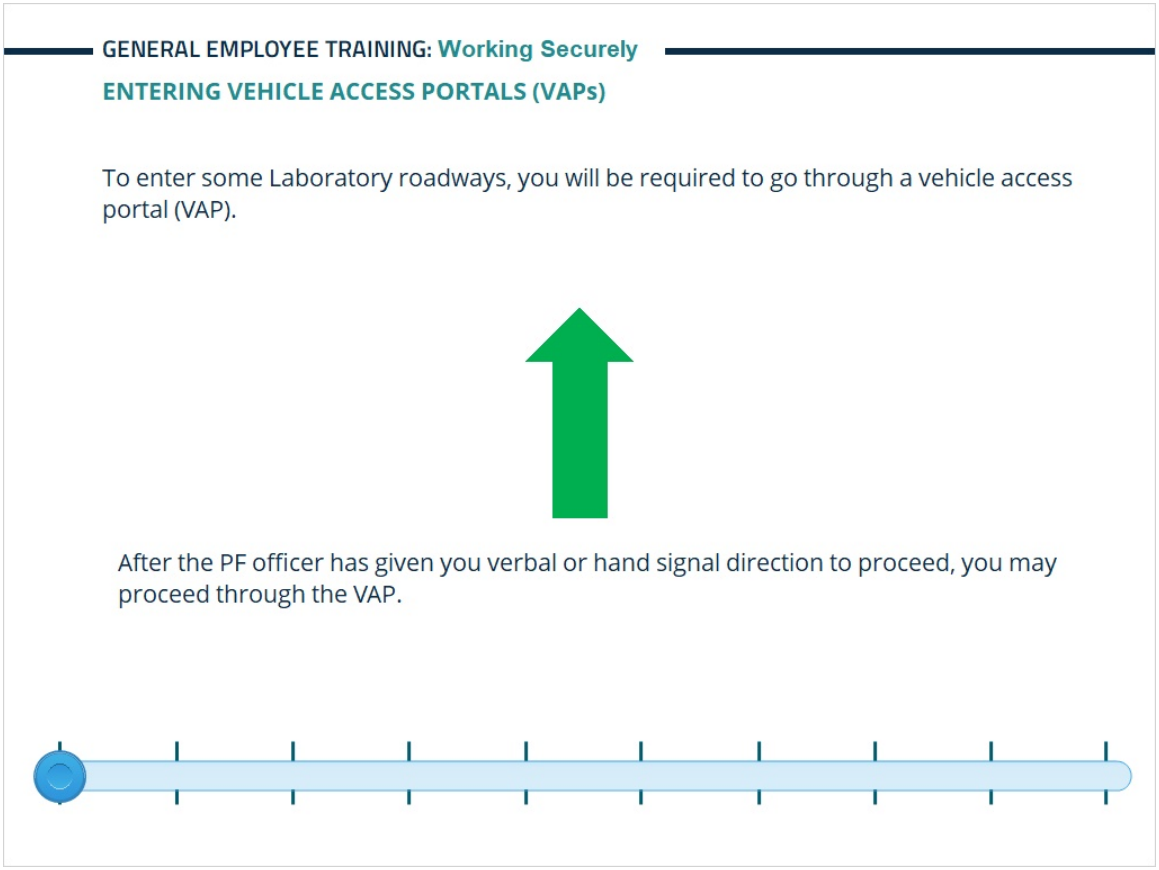
GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).

Bicyclists: The VAPs on Pajarito Road require bicyclists to stop under an Elevated Security Condition (SECON 3). All LANL VAPs require bicyclists to stop under a High Security Condition (SECON 2). If stopping is not required, they may proceed slowly and safely through the VAP.

proceed (Slide Layer)



merge (Slide Layer)

GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).

Merge into the main roadway with caution, considering other vehicles in the area that are also exiting and merging.

badge (Slide Layer)

GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).

At the VAPs on Pajarito Road, all individuals must show a valid security badge (Federal Security Badge or LANL site-specific badge issued by the Badge Office). Workers with generic "Visitor" badges (badges not issued directly to a worker by the Badge Office) can be escorted through the Pajarito corridor by a worker who is approved for unescorted access to the corridor with an approved security plan for the work being conducted.

identity (Slide Layer)

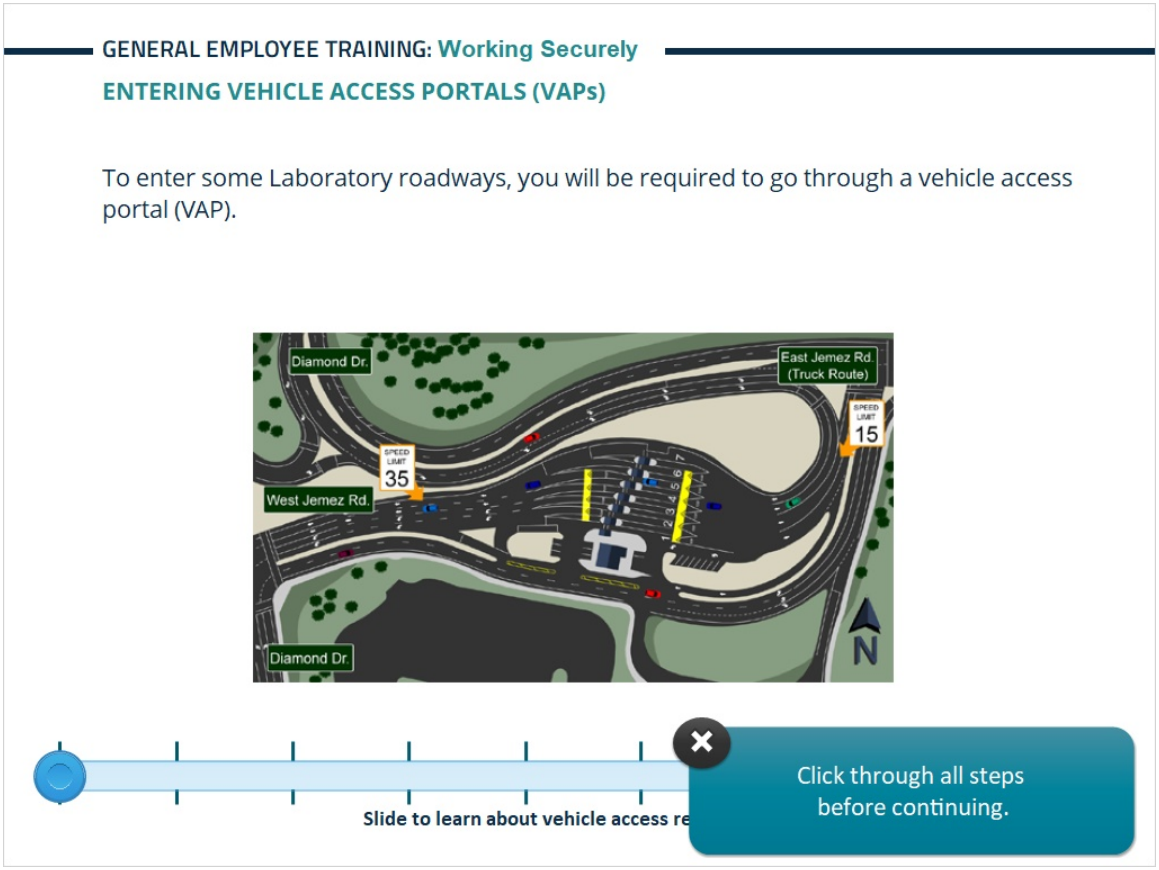
GENERAL EMPLOYEE TRAINING: Working Securely

ENTERING VEHICLE ACCESS PORTALS (VAPs)

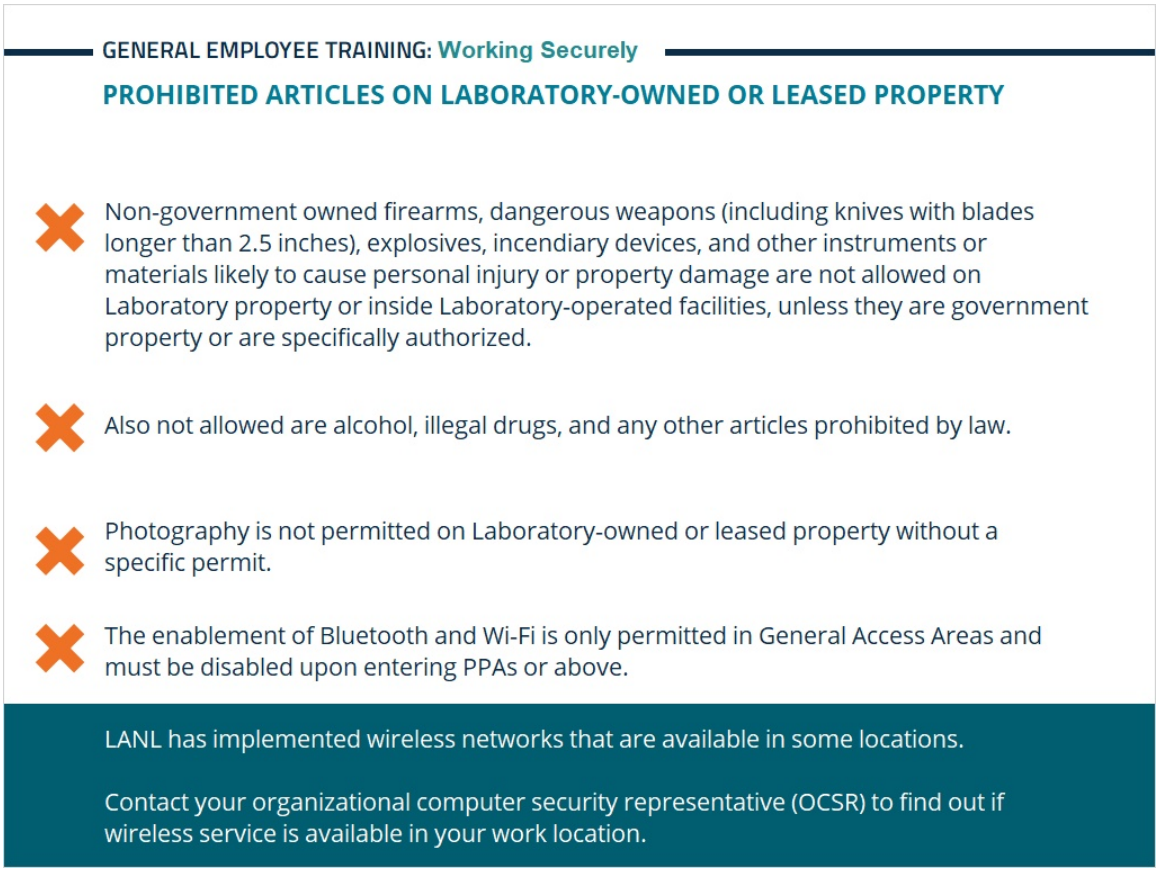
To enter some Laboratory roadways, you will be required to go through a vehicle access portal (VAP).

Each PF officer has the duty and obligation to verify the identity of persons entering. You must comply with requests to remove anything that may obstruct your facial features, such as helmets, hats, scarves, or sunglasses. Vehicle access requirements may change according to the security condition. Please go to the Security website for more information on VAP requirements.

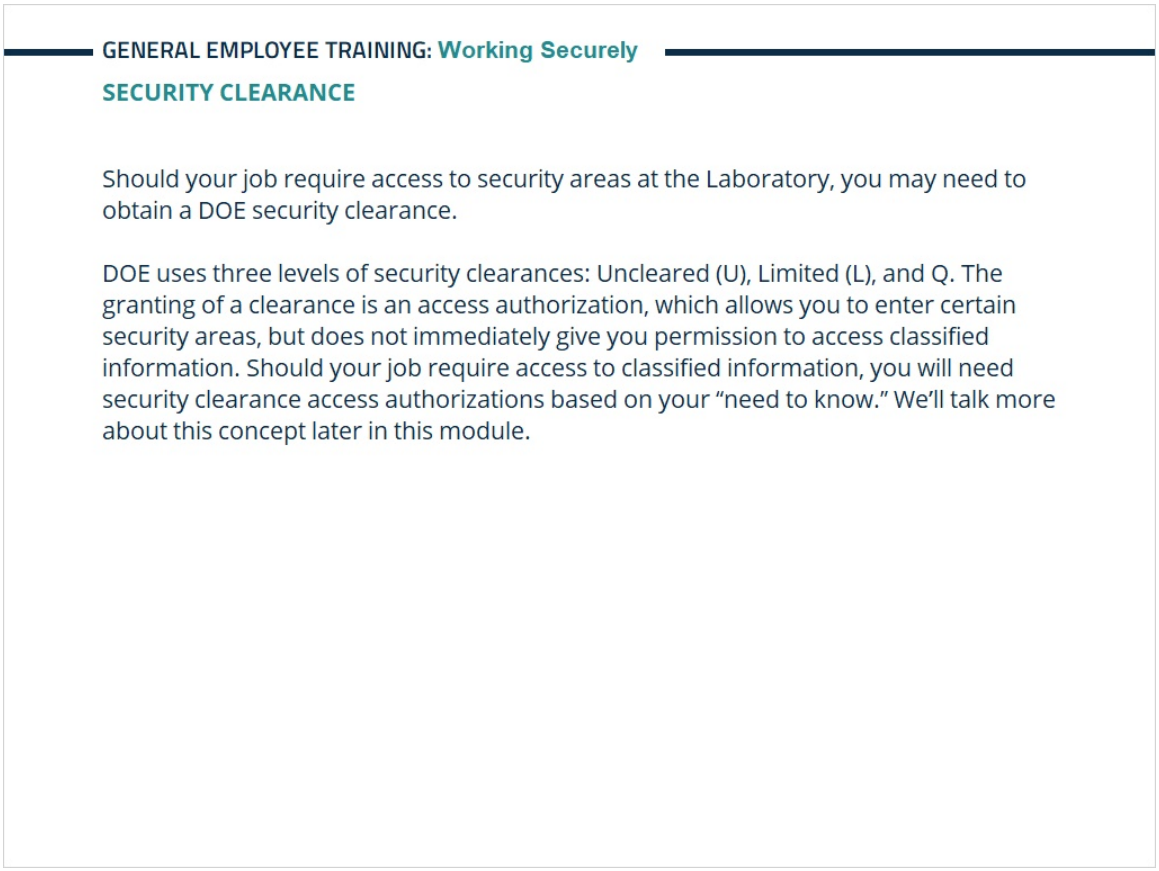
warning (Slide Layer)



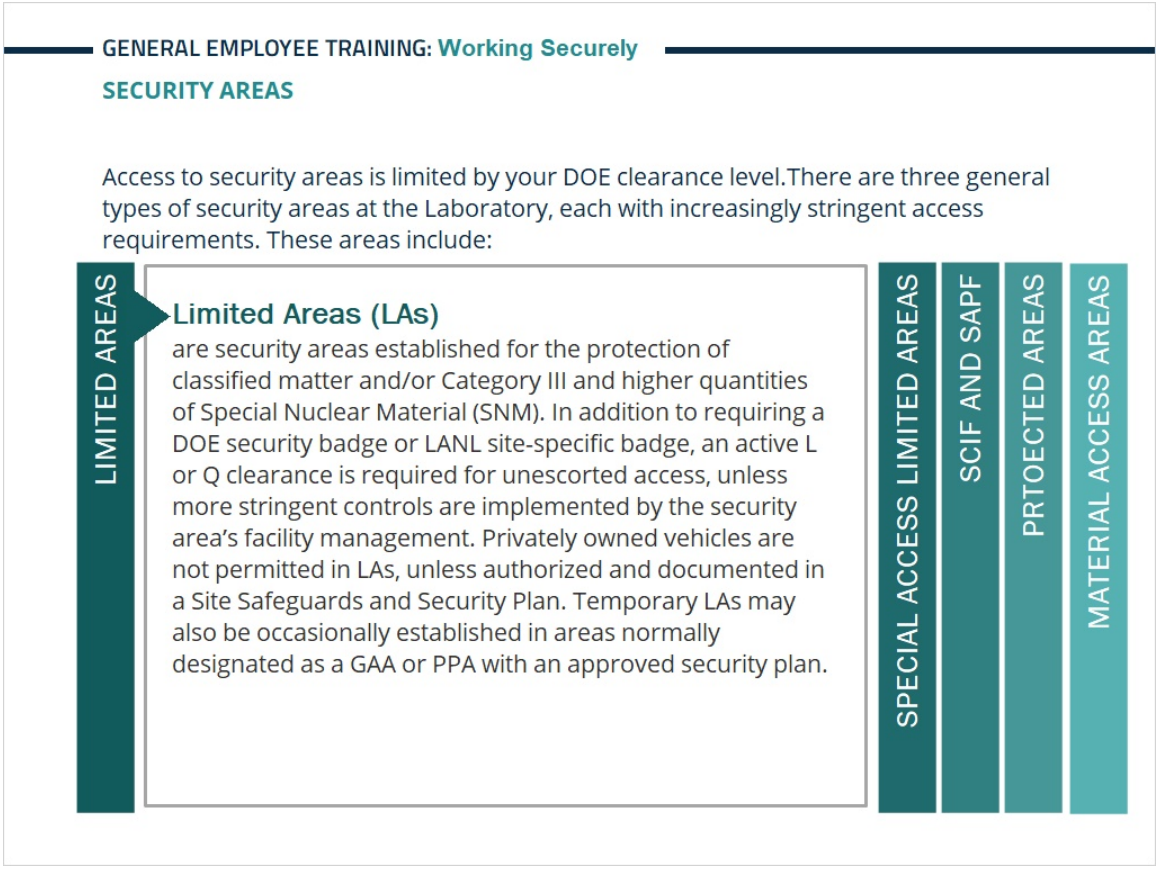
4.15 Prohibited Articles



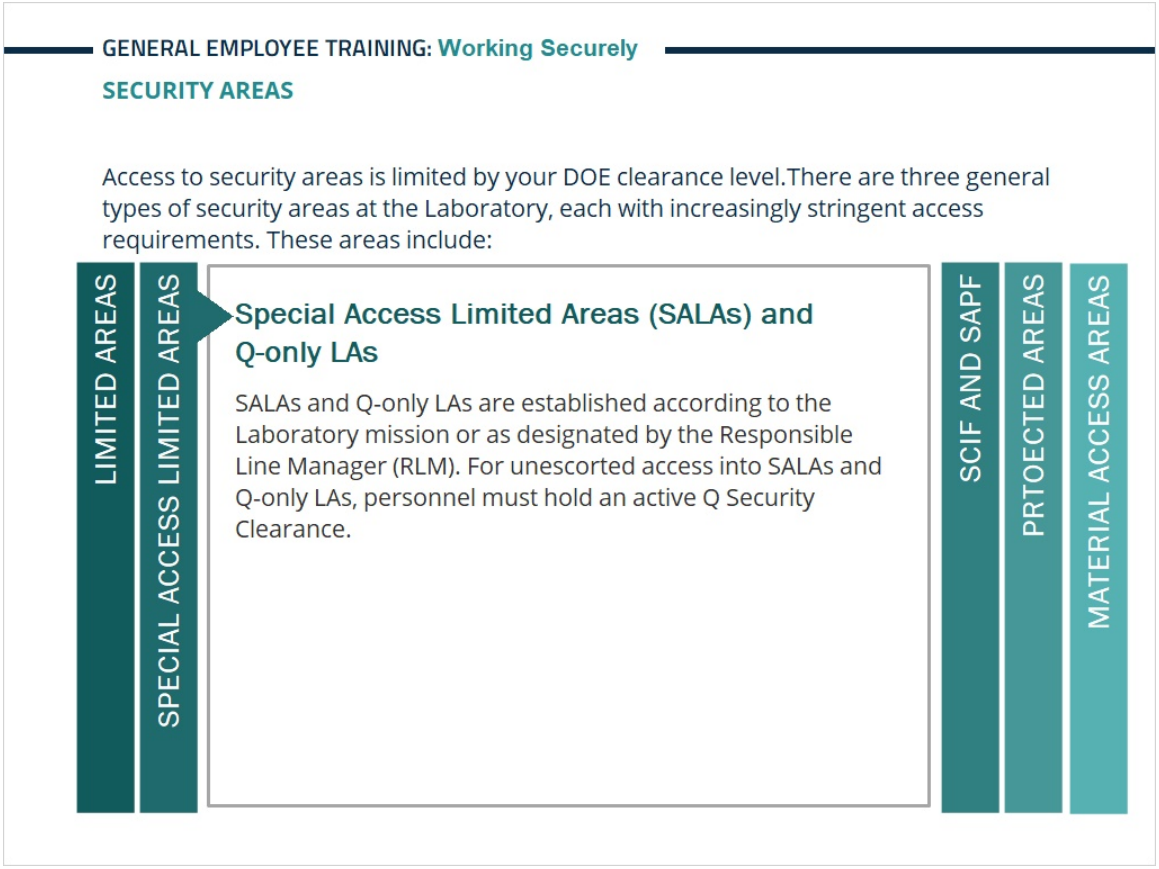
4.16 Security Clearance



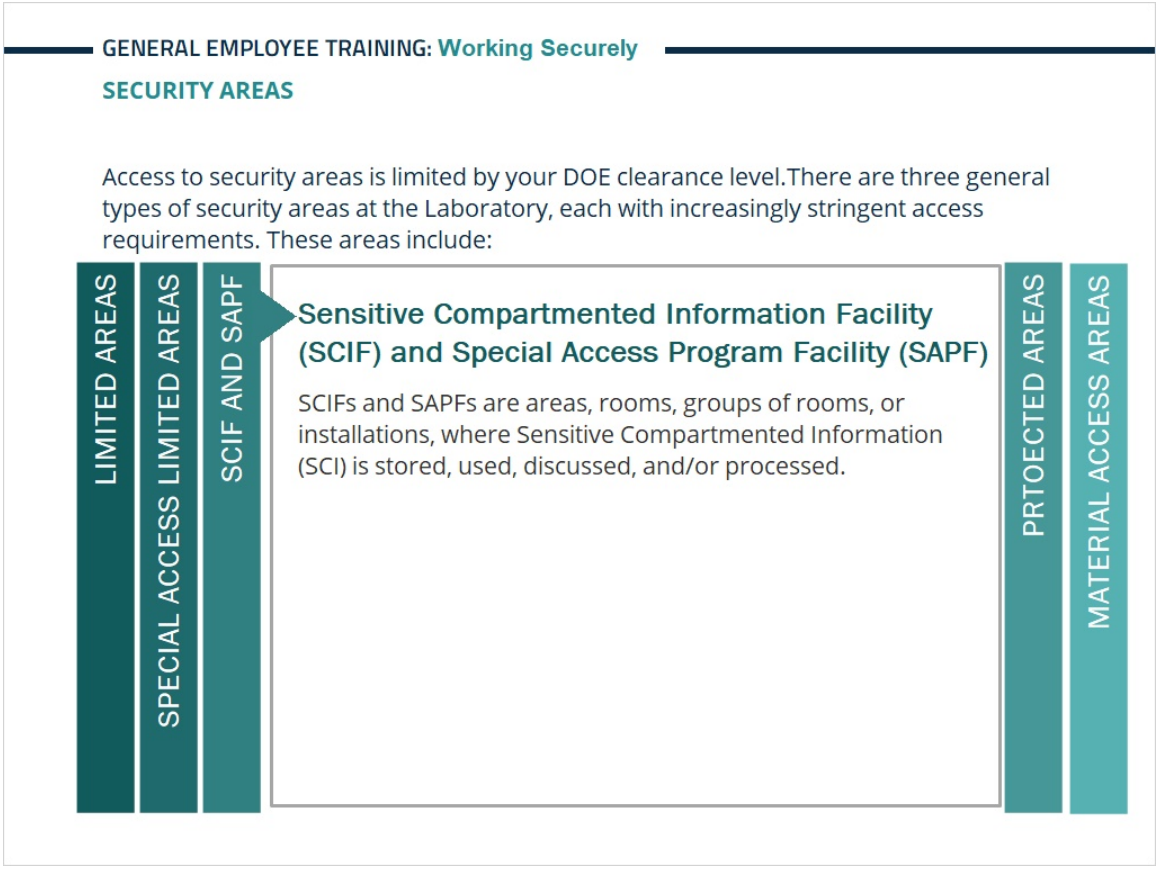
4.17 Security Areas



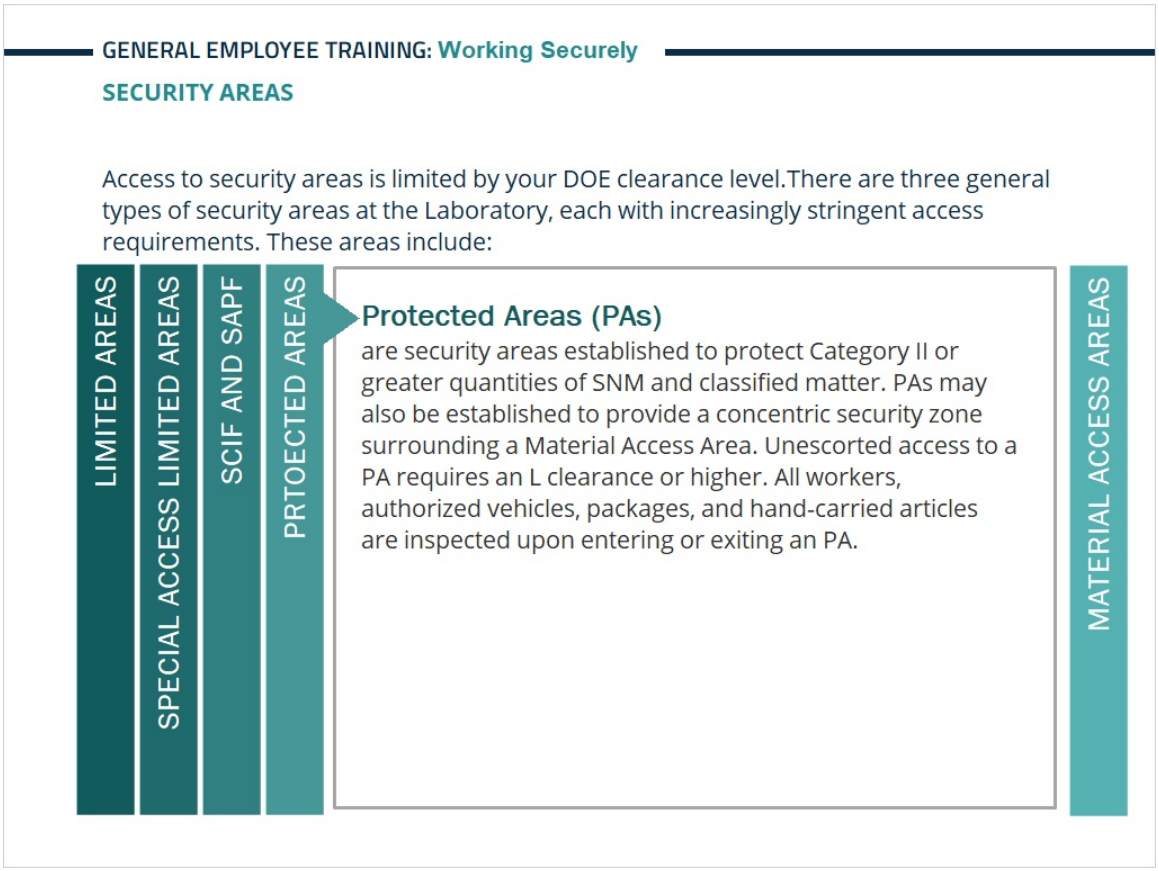
4.18 Security Areas



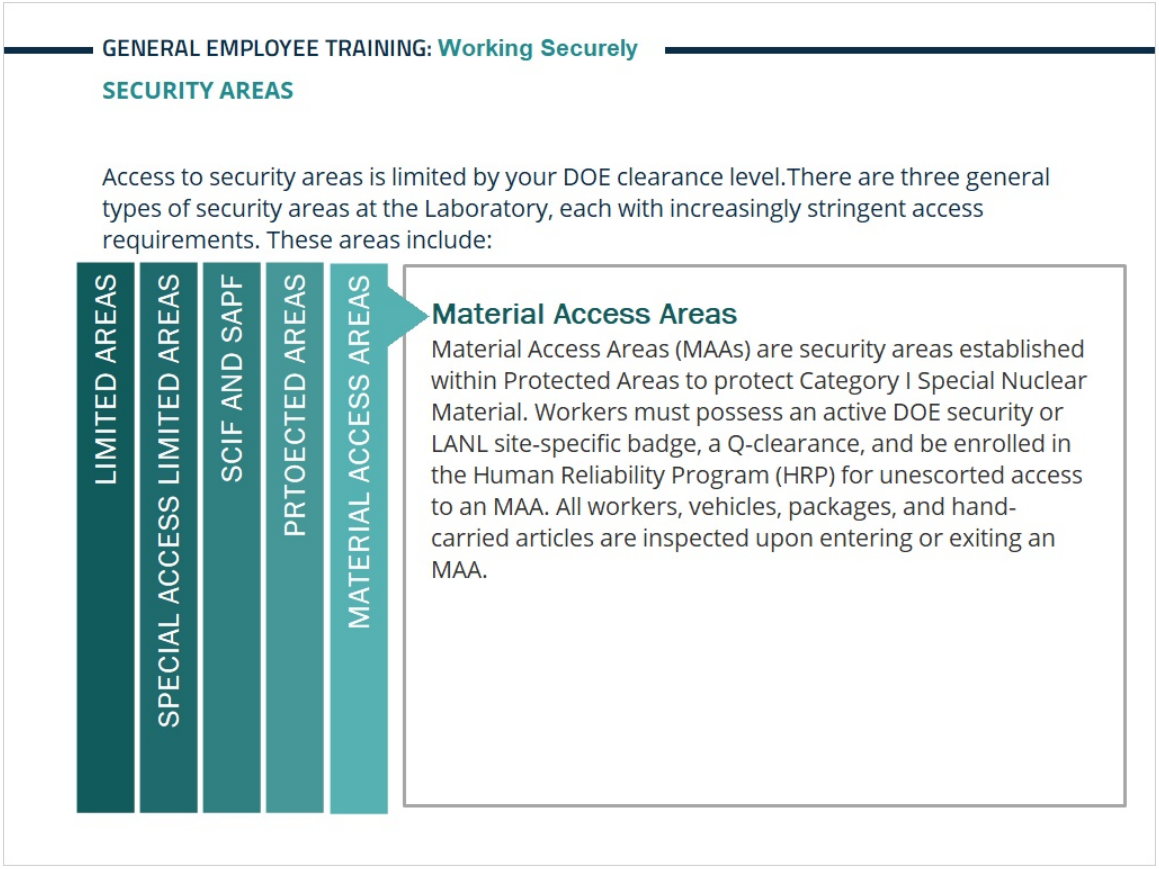
4.19 Security Areas



4.20 Security Areas



4.21 Security Areas



4.22 Escorting

4.23 Entering and Leaving Secure Areas

GENERAL EMPLOYEE TRAINING: **Working Securely**

ENTERING AND LEAVING SECURE AREAS

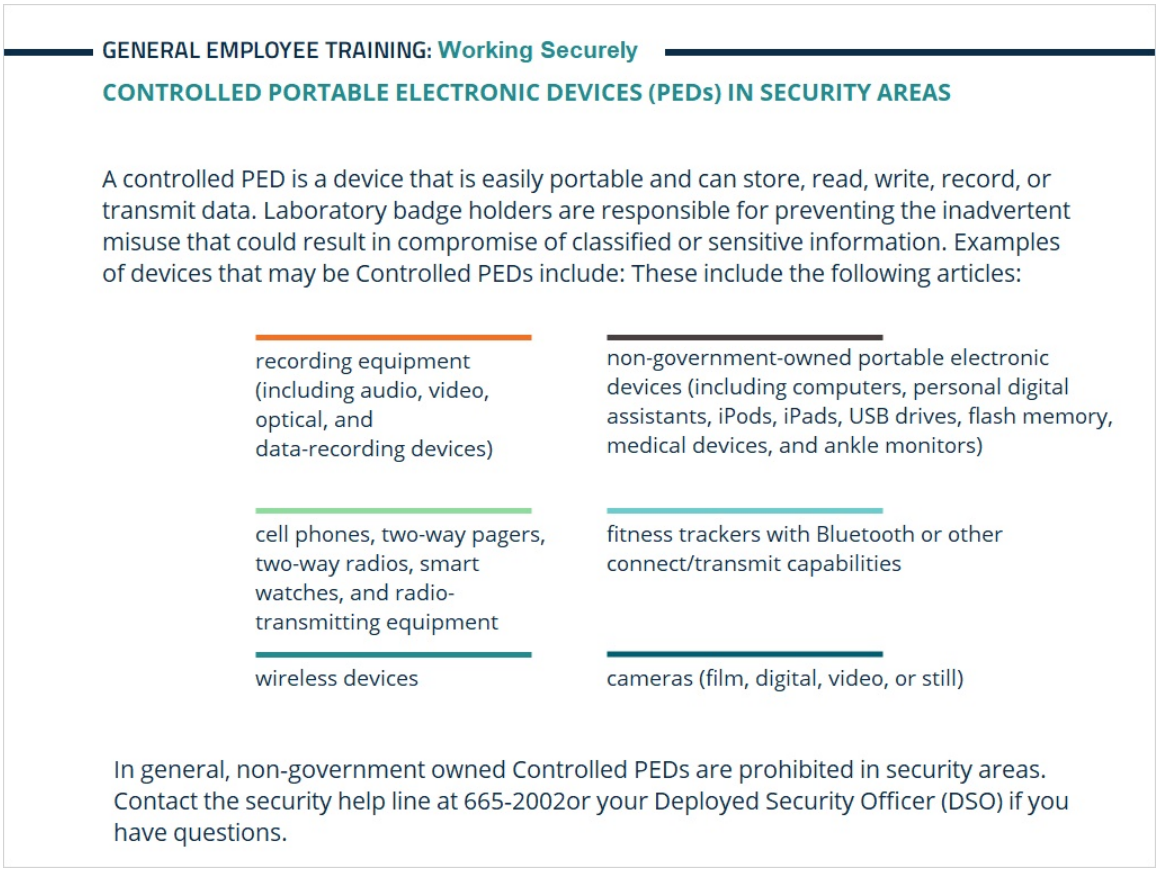
When entering a staffed security post, hand your badge to the Protective Force (PF) officer. You will need to use a badge reader and possibly a hand geometry reader (commonly known as a palm reader) or PIN to enter security areas. Property Protection Areas use badge readers only.

In some security areas, you may need to pass through a metal detector. Your purse, coat, briefcase, lunchbox, and other packages may be checked by an x-ray machine or a PF officer.

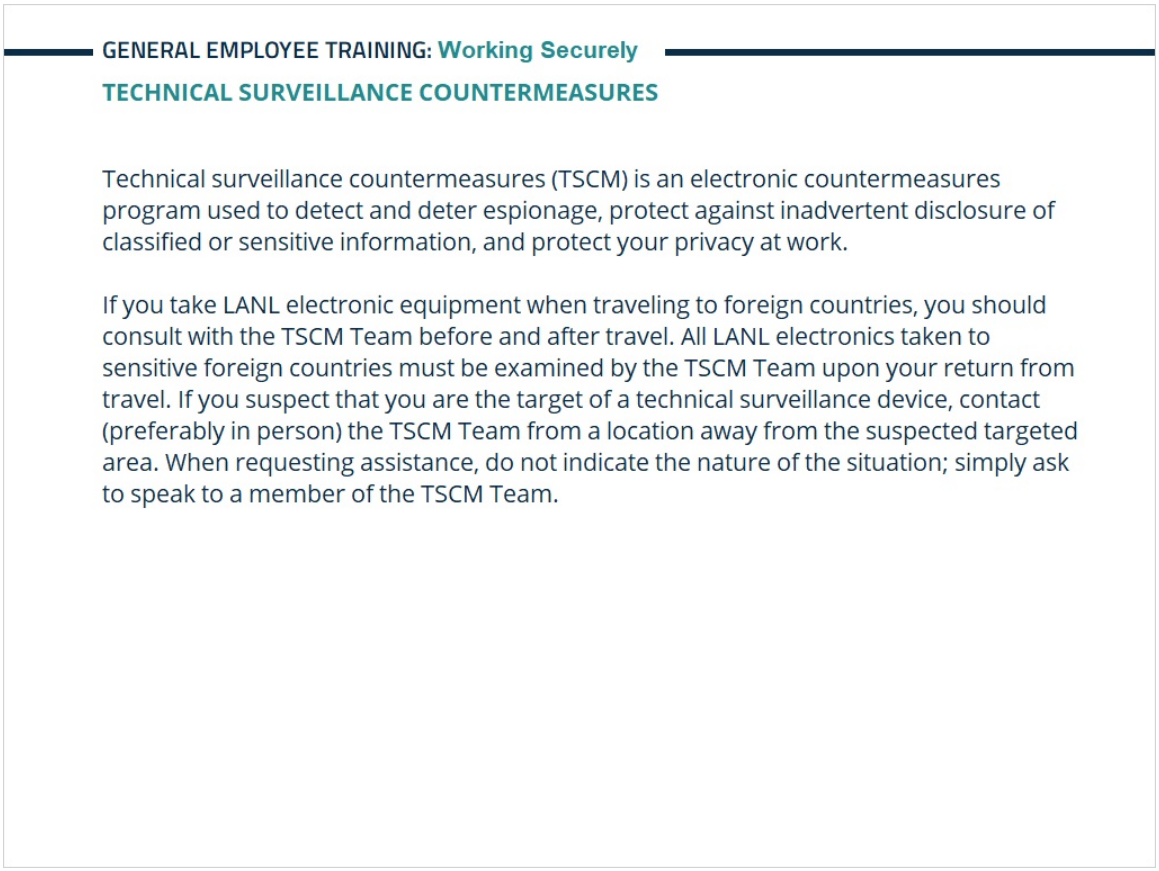
If a badge reader at an entrance to a security area does not read your badge, it may mean that your security training has expired or another badge/clearance issue needs to be resolved before access is reinstated. Remember, you must keep your security training up to date.

Remember that "piggybacking" (allowing another individual with the required clearance, appropriate badge, and need-to-know to access a security area without using automated access controls, such as badge or palm readers) and "tailgating" (allowing another individual to enter a facility behind you after you swipe your badge or following someone into a security area without swiping your badge) are not allowed. Every worker must use his or her own badge to gain access to a security area.

4.24 Controlled Articles



4.25 Countermeasures



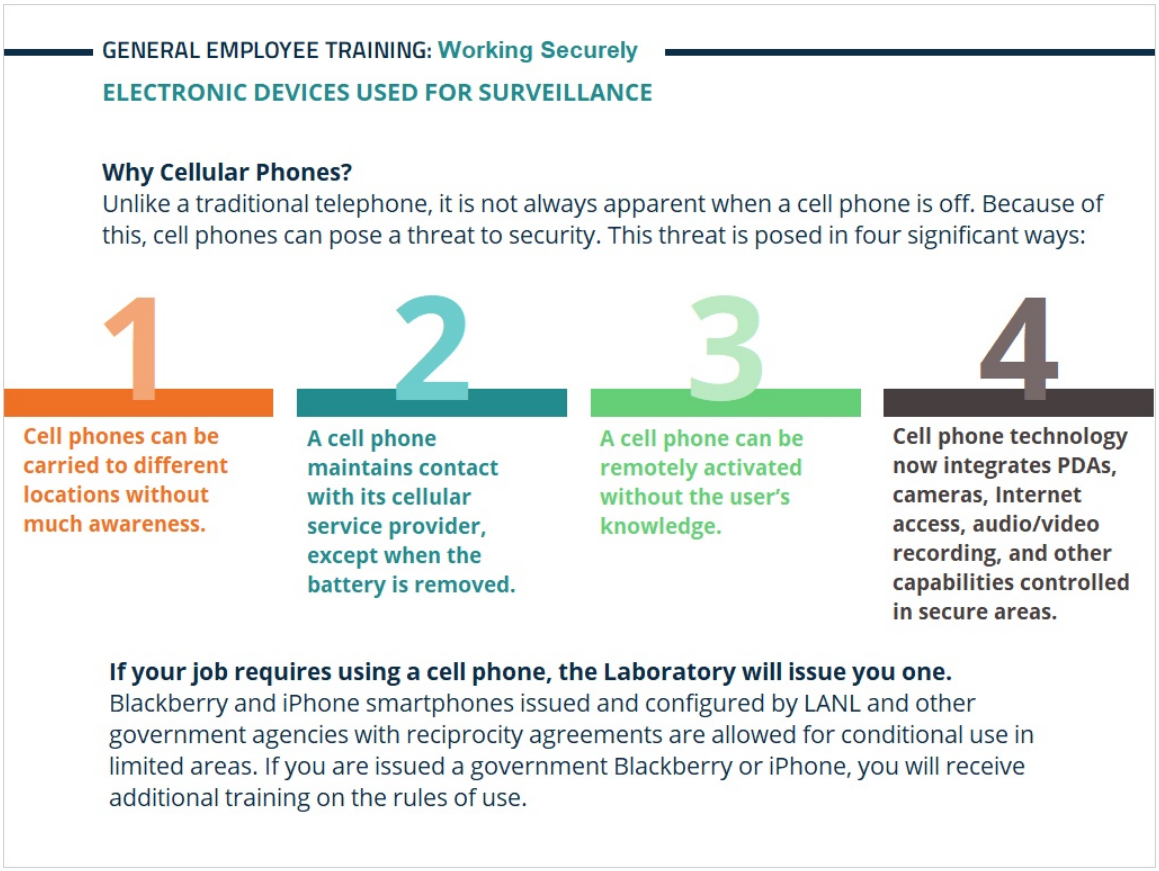
4.26 Electronic Devices

GENERAL EMPLOYEE TRAINING: Working Securely

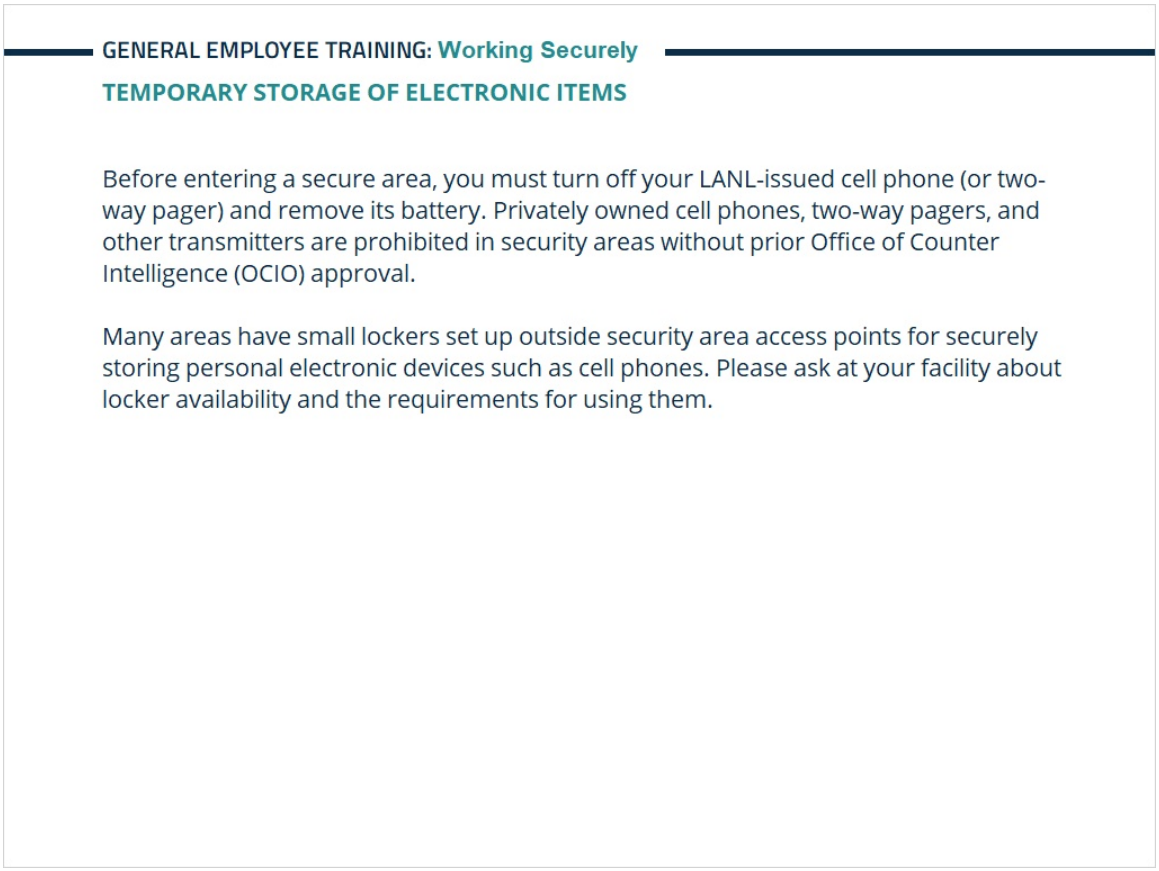
ELECTRONIC DEVICES USED FOR SURVEILLANCE

The following electronic devices pose a security risk if intentionally or unintentionally used as surveillance equipment:

4.27 Electronic Devices, Cont.

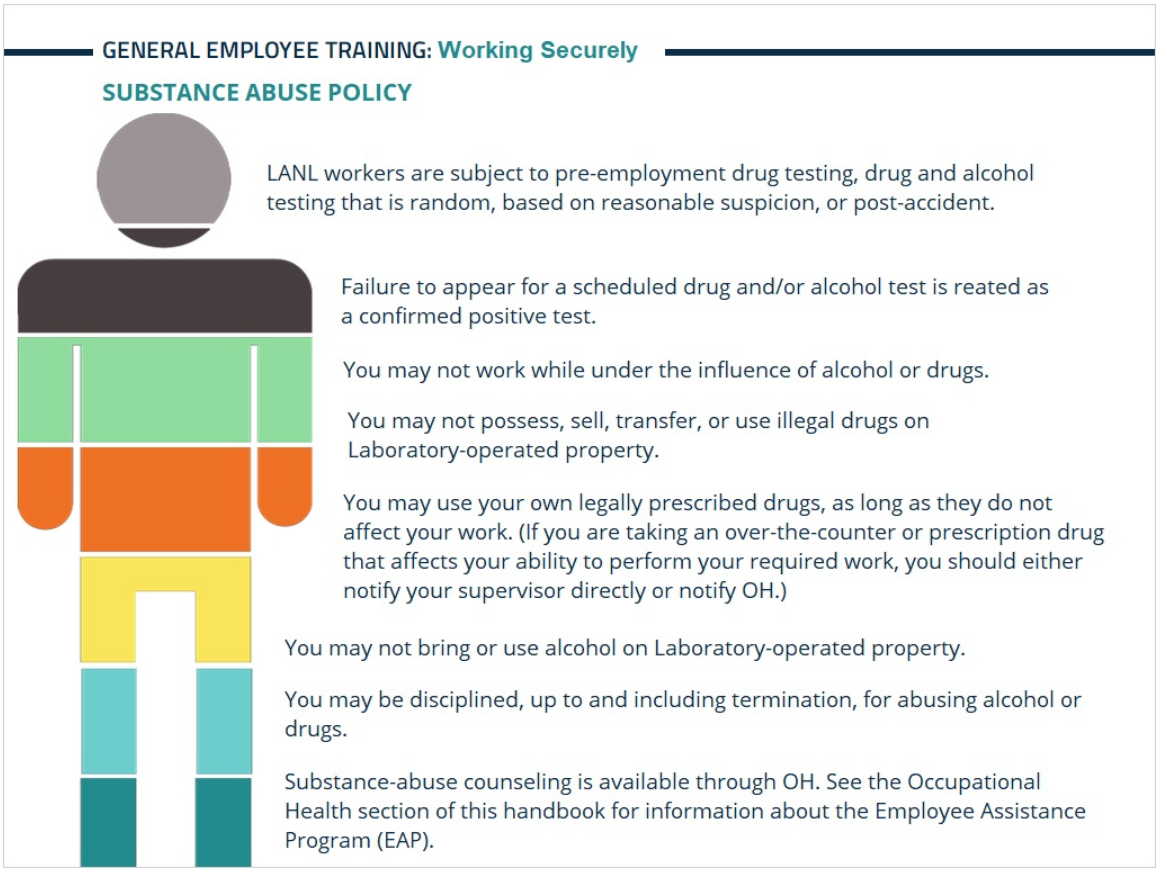


4.28 Temporary Storage



4.29 Substance Abuse Policy

4.30 Substance Abuse Policy



warning (Slide Layer)

4.31 Reporting Security Incidents

GENERAL EMPLOYEE TRAINING: **Working Securely**

REPORTING SECURITY INCIDENTS

You are required to immediately report any known or potential security incidents to the Security Incident Team (SIT), your DSO, and your Responsible Line Manager (RLM). Reports must be made to a person and cannot be e-mailed or left on voicemail. Ensure that potentially classified information is discussed only via secure means.

Incidents of Security Concern

Security incidents can include:

- classified information being processed on an unclassified computer
- the incorrect transmission or reproduction of classified matter
- the unauthorized or inadvertent disclosure of classified matter
- unsecured/unattended classified matter and/or container
- classified matter that is lost, stolen, or unaccounted for
- attempts to remove, divert, or obtain unauthorized access to classified matter
- unauthorized access to classified or unclassified information systems/networks
- any breach or attempted breach of a security area, access controls, or security system
- the introduction of prohibited/controlled articles into a security area
- the incorrect use of a security badge
- sabotage of LANL facilities
- known or suspected cases of technical surveillance
- and any suspicious or criminal activity.

You must also report the theft or misuse of government property. To do so, you may notify your supervisor, your division's security officer, LANL's Investigative Services Team (LIST), or the Employee Concerns Program (ECP) to report issues of waste, fraud, or abuse.

4.32 Classified Information

GENERAL EMPLOYEE TRAINING: **Working Securely**

CLASSIFIED INFORMATION

Classification is the process of identifying information that would damage national security if it were released to unauthorized persons. Classification allows for the appropriate protection of information. When classified information is improperly disclosed, some degree of damage to national security occurs on a range from serious to exceptionally grave. The extent of this damage potential is used to assign the levels of classification.

Classified matter should never be left unattended or unprotected. If you find classified matter in an inappropriate area, notify your RLM or the SIT immediately.

Classified information is given a level, as follows:

- Top secret (TS)
- Secret (S)
- Confidential (C)

Should your job require access to classified information, you will need the appropriate security clearance and a "need-to- know." Need-to-know is not simply an expedience, but the determination that a prospective recipient requires access to specific classified information to perform or assist in a lawful and authorized government function. Before you are allowed access to classified information, you will receive more information and training. At this point, however, here are a few things to remember.

4.33 Controlled Unclassified Information

GENERAL EMPLOYEE TRAINING: **Working Securely**

CONTROLLED UNCLASSIFIED INFORMATION (CUI)

Some information is controlled, even though it is not classified. CUI must be marked appropriately. Some types are:

- unclassified controlled nuclear information (UCNI)
- unclassified Controlled Naval Nuclear Propulsion Information (UNNPI)
- export-controlled information (ECI)
- official use only (OUO), which includes personal/privacy information, company proprietary information, and information required by law to be withheld from public release
- personally identifiable information (PII), such as social security numbers, date and place of birth, and medical and employment records

CUI, if released, could help a terrorist gain access to nuclear materials, compromise technology with military or security applications, or compromise administrative or personnel information. Many categories of CUI, when in electronic form, require data encryption when sent or carried offsite. Any known or suspected loss of PII must be reported immediately.

Your CUI Responsibilities

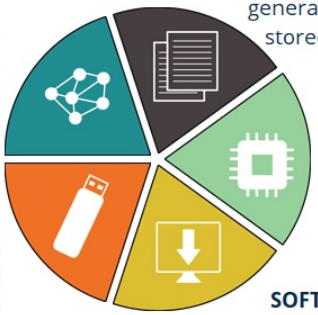
If you work with CUI, your RLM will instruct you on the proper procedures for handling it. If you find CUI in an inappropriate area, protect the information and notify your RLM immediately.

4.34 Information Security

GENERAL EMPLOYEE TRAINING: **Working Securely**

INFORMATION SECURITY

The goal of the information security program is to protect the confidentiality, integrity, and availability of information. The LANL Cyber Security program prevents unauthorized access, use, disclosure, disruption, modification, recording, or destruction of information. Also referred to as cyber security, information security involves



INFORMATION
generated, processed, transmitted and/or stored on the system

NETWORKS
multiple computers interconnected over various communications lines

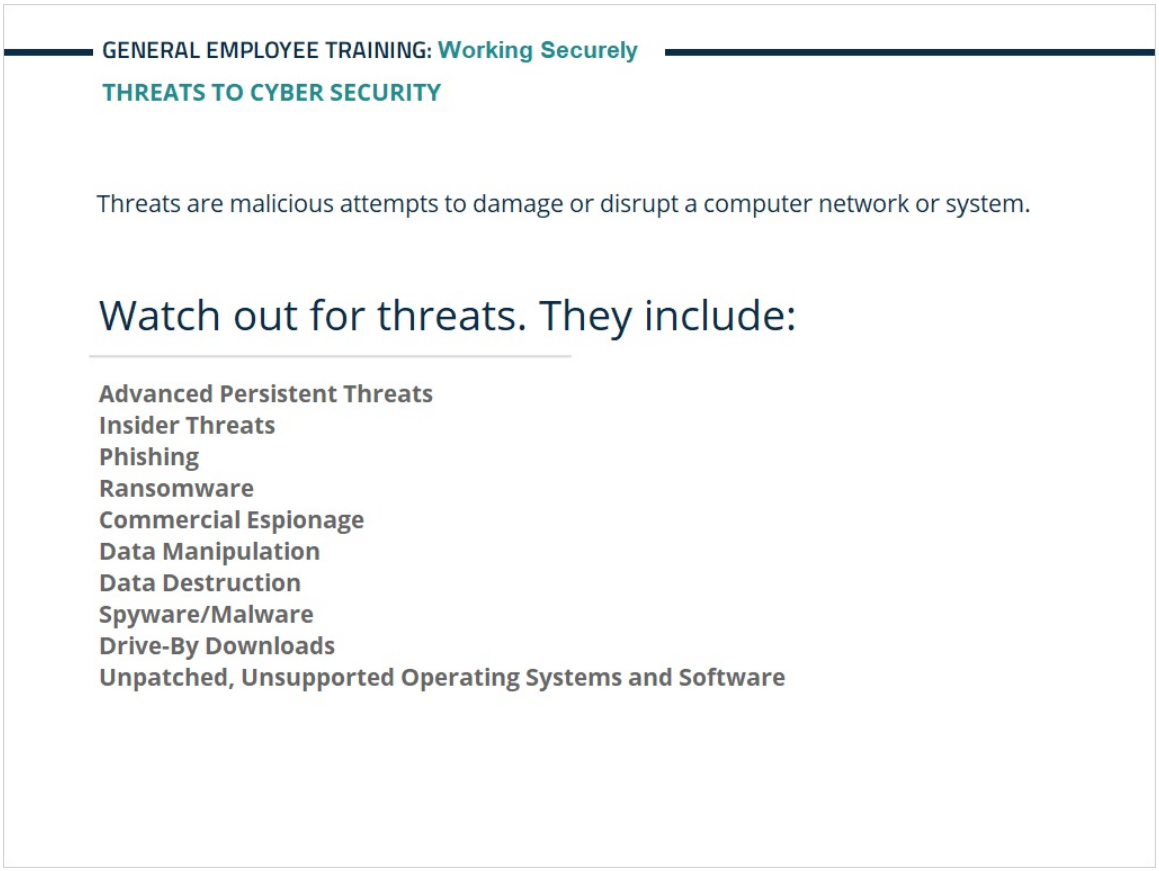
HARDWARE
the physical parts of the computer itself

MEDIA
devices that store information and programs, such as magnetic, optical, or solid state

SOFTWARE
the operating systems and programs

A cyber security incident is any event or threat that affects normal operations of or has an undesirable impact on a computer system and/or computing facility, such as attempted access to computing resources without authorization or contamination of an unclassified system with classified information. Incidents may also include using a computer system in connection with criminal acts, unsanctioned work, or fraud and abuse.

4.35 Untitled Slide



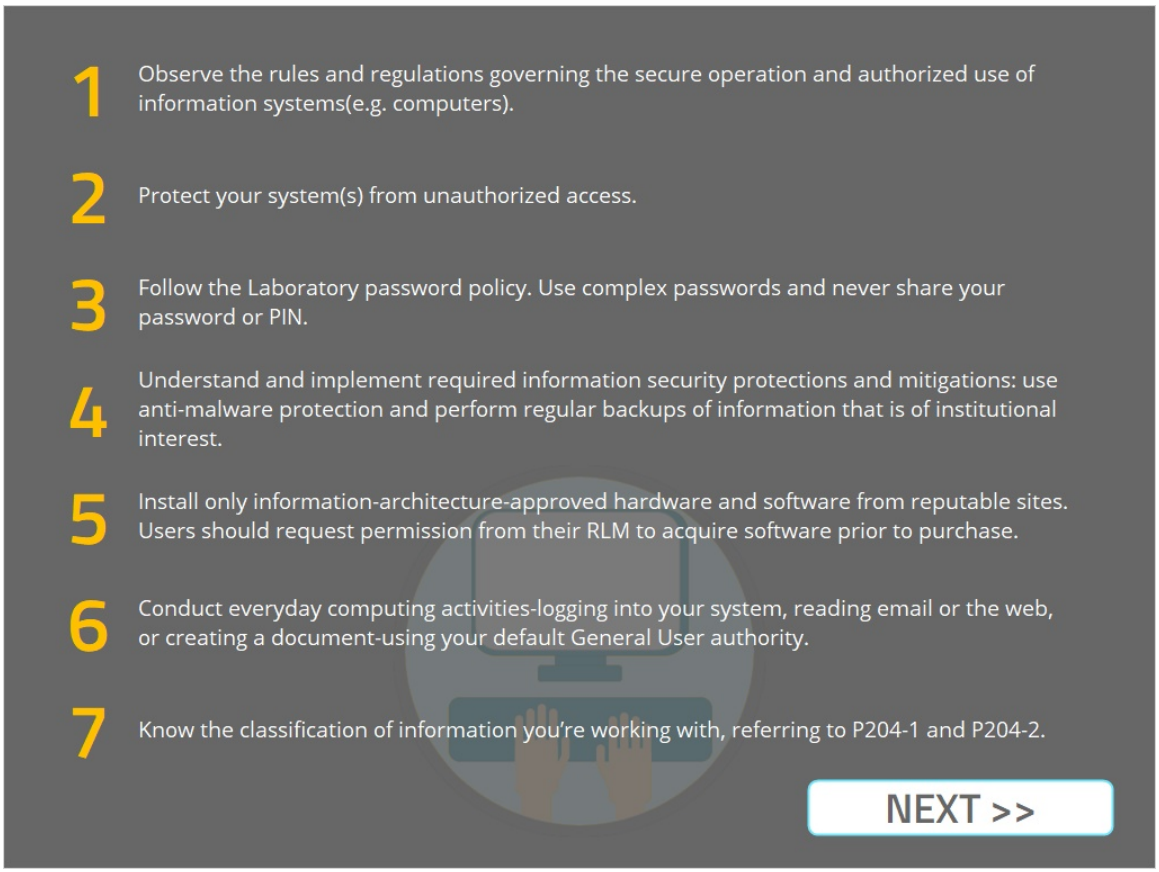
4.36 Information Security Reminders

GENERAL EMPLOYEE TRAINING: **Working Securely**

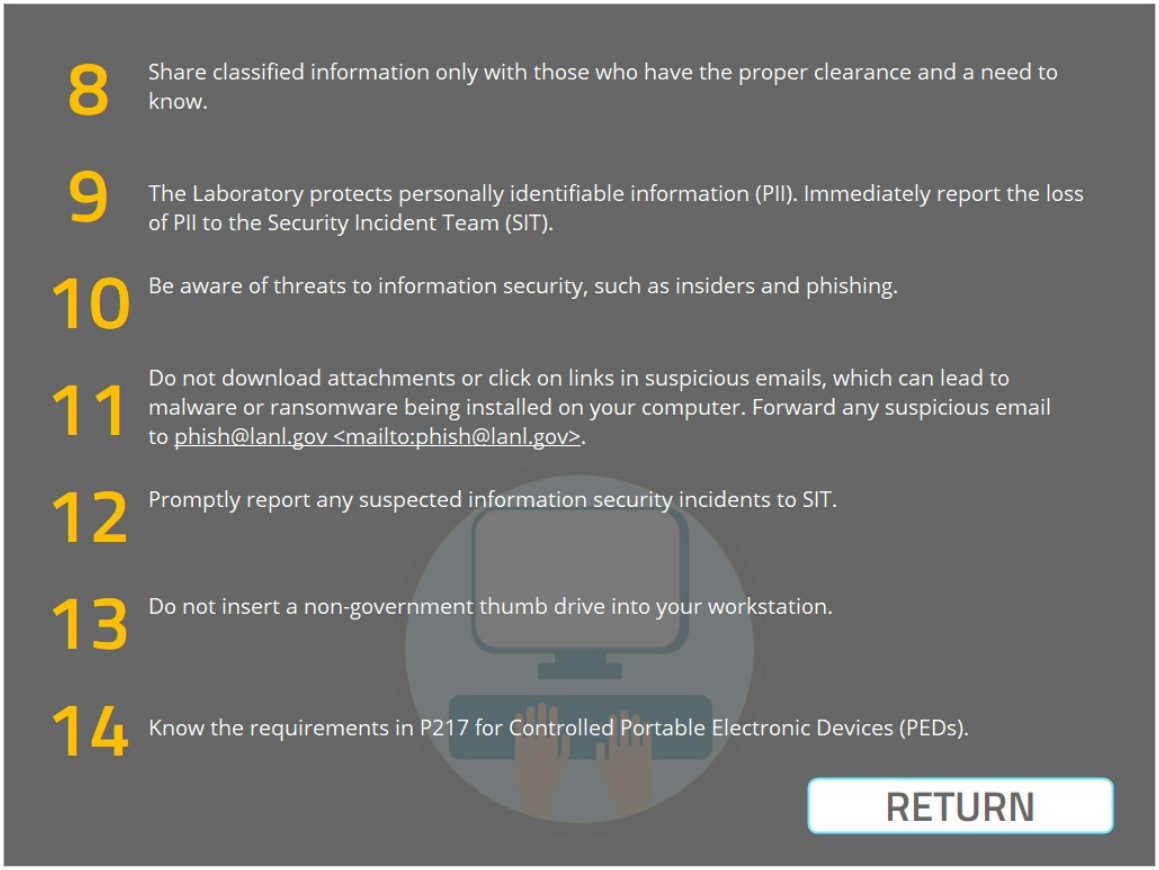
INFORMATION SECURITY REMINDERS

As a Laboratory General User, you are required to participate actively in information security by following all policies and procedures (PD210-226 on the LANL Policy website) set forth by DOE and the Laboratory. When you use a Laboratory system, you agree to the terms and conditions of use, including the possibility that your system may be audited, monitored, copied, confiscated, or inspected. Here are some tips for good information security:

REMINDER1 (Slide Layer)



REMINDER2 (Slide Layer)



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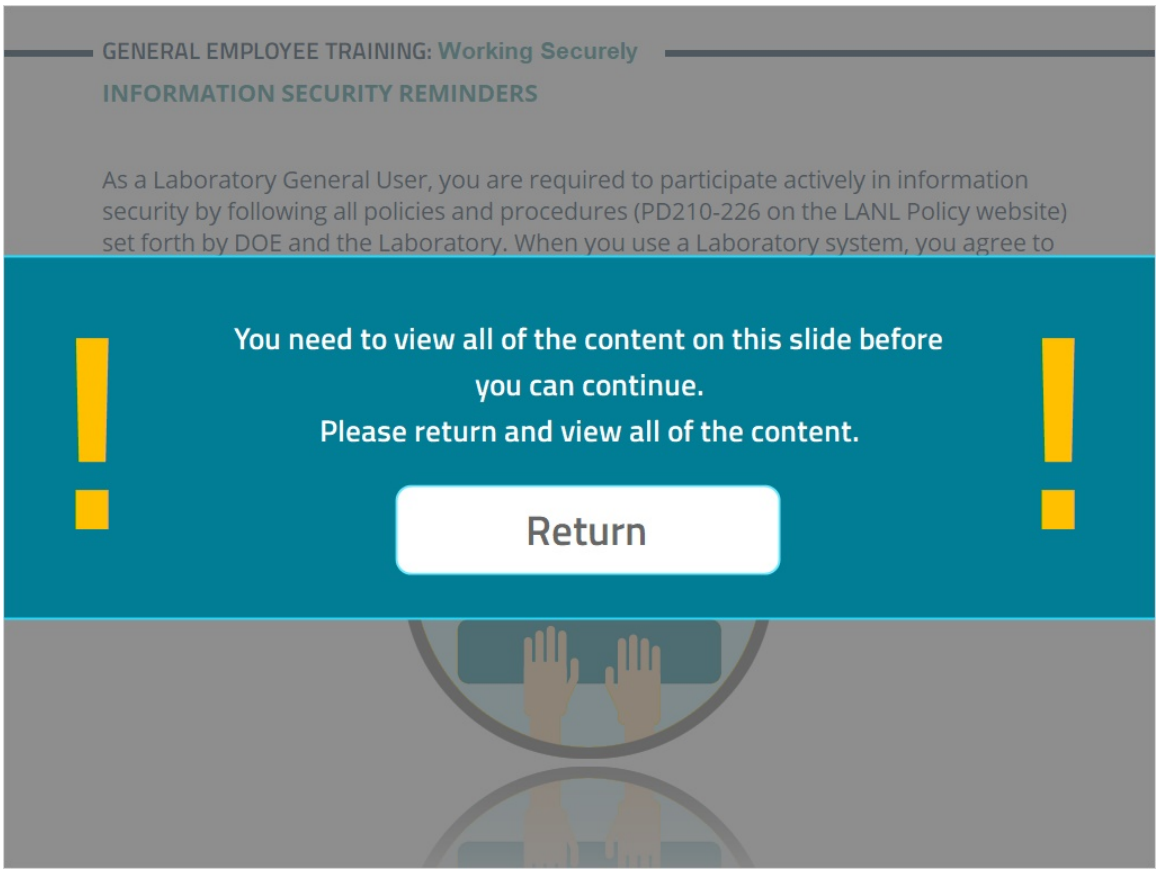
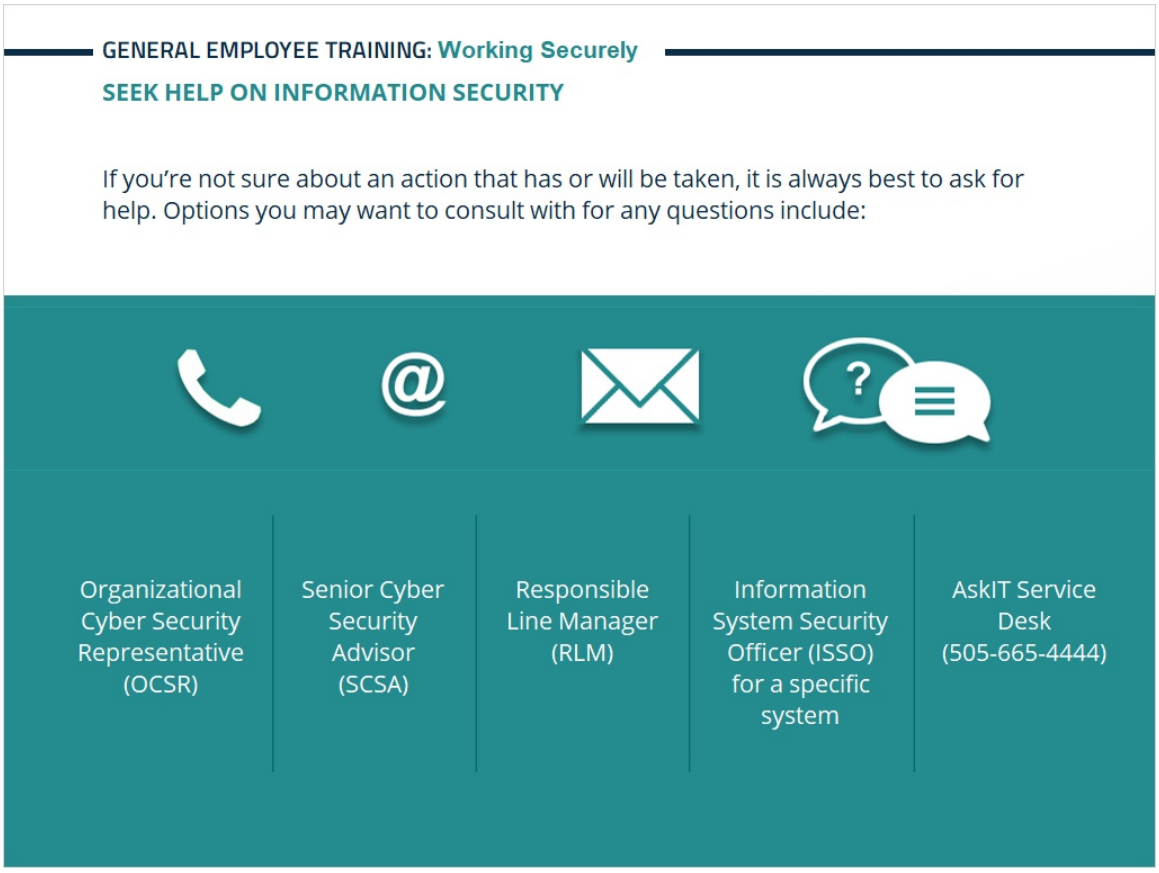
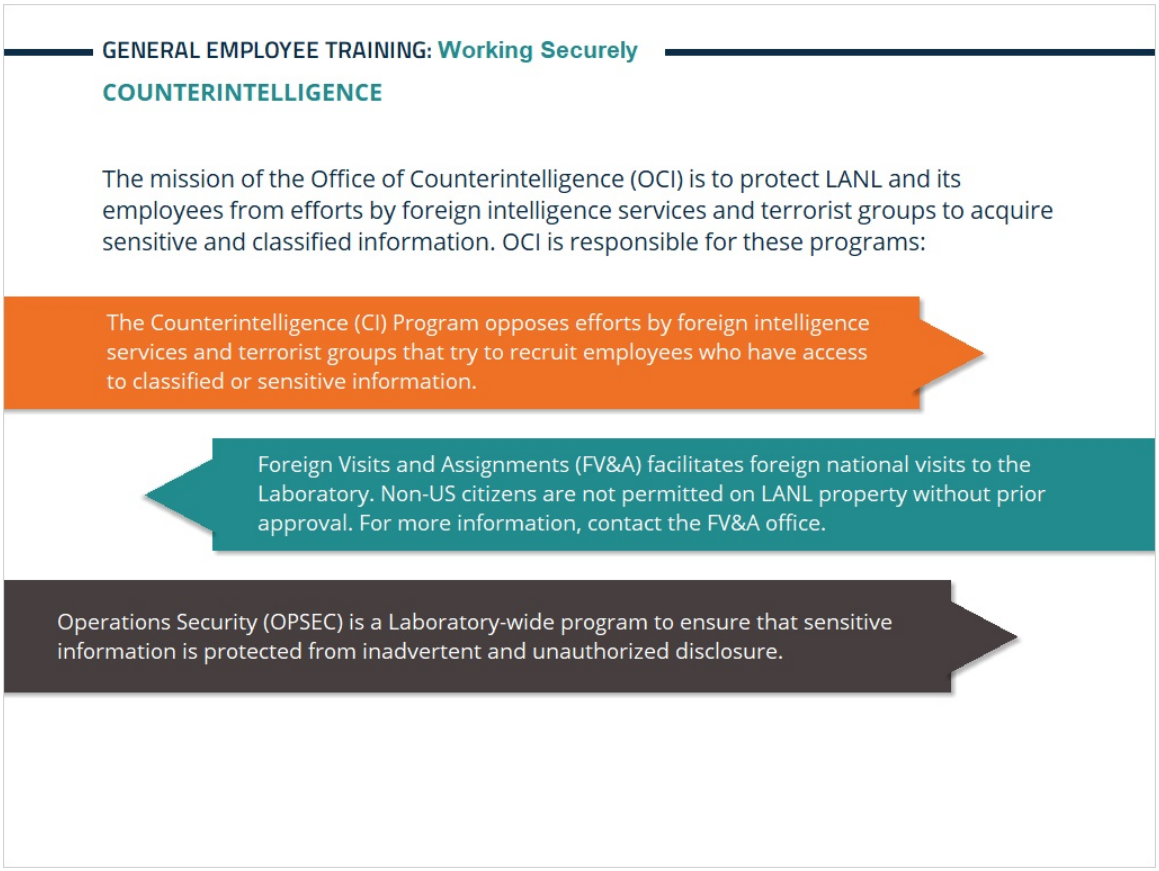


4.37 Reporting



4.38 Counterintelligence



4.39 Counterintelligence Threats and Methods

GENERAL EMPLOYEE TRAINING: Working Securely

COUNTERINTELLIGENCE THREATS AND METHODS

As a LANL employee, you could be the target of illegal or unauthorized attempts to gain access to classified or sensitive information, technology, or special nuclear material and must report any attempts to breach this security. The hostile intelligence threat is twofold:

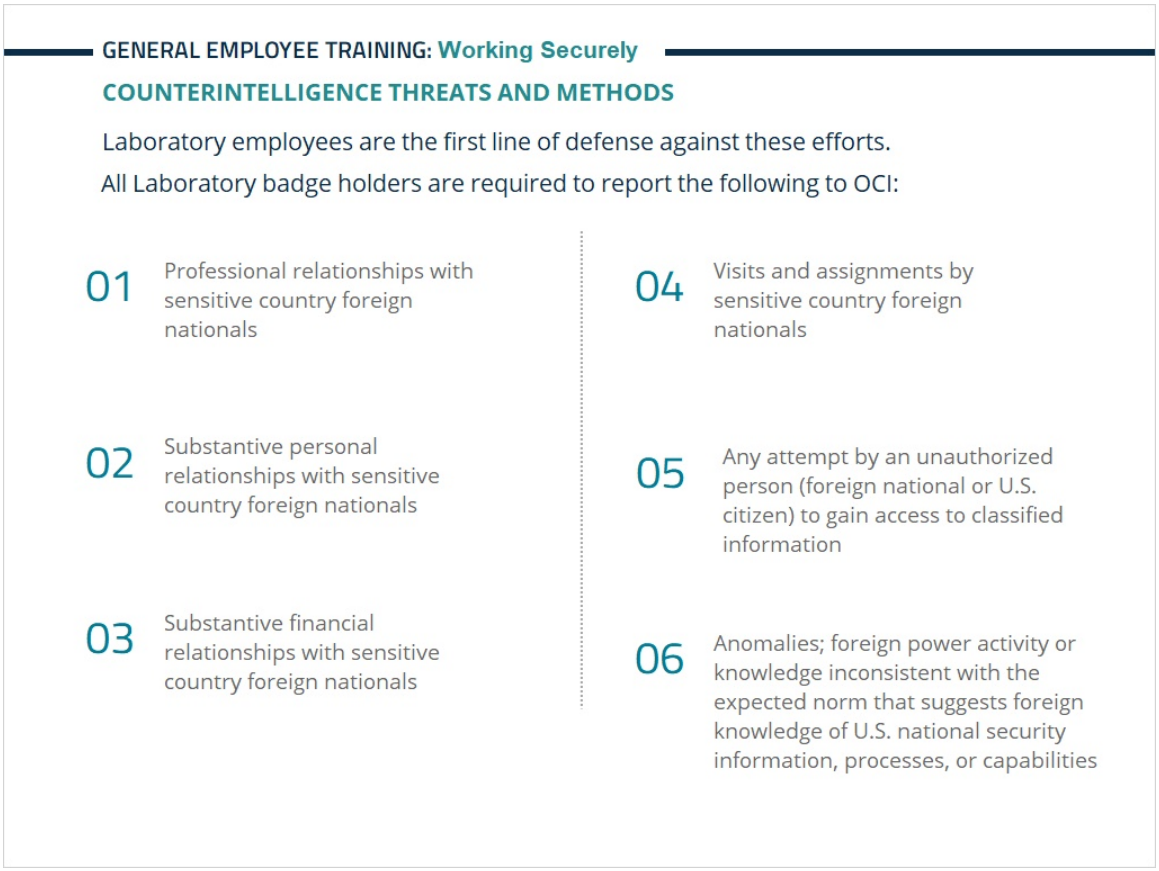
- information obtained about classified programs can be used to damage national security and
- illegally obtained research and development technology could result in significant loss to the US.

Although intelligence agencies use many collection methods, the two methods in particular that should concern you if you work with classified or sensitive programs at the Laboratory are trained information collectors trying to elicit information from you and foreign intelligence agents trying to recruit workers in facilities or programs of interest to them.

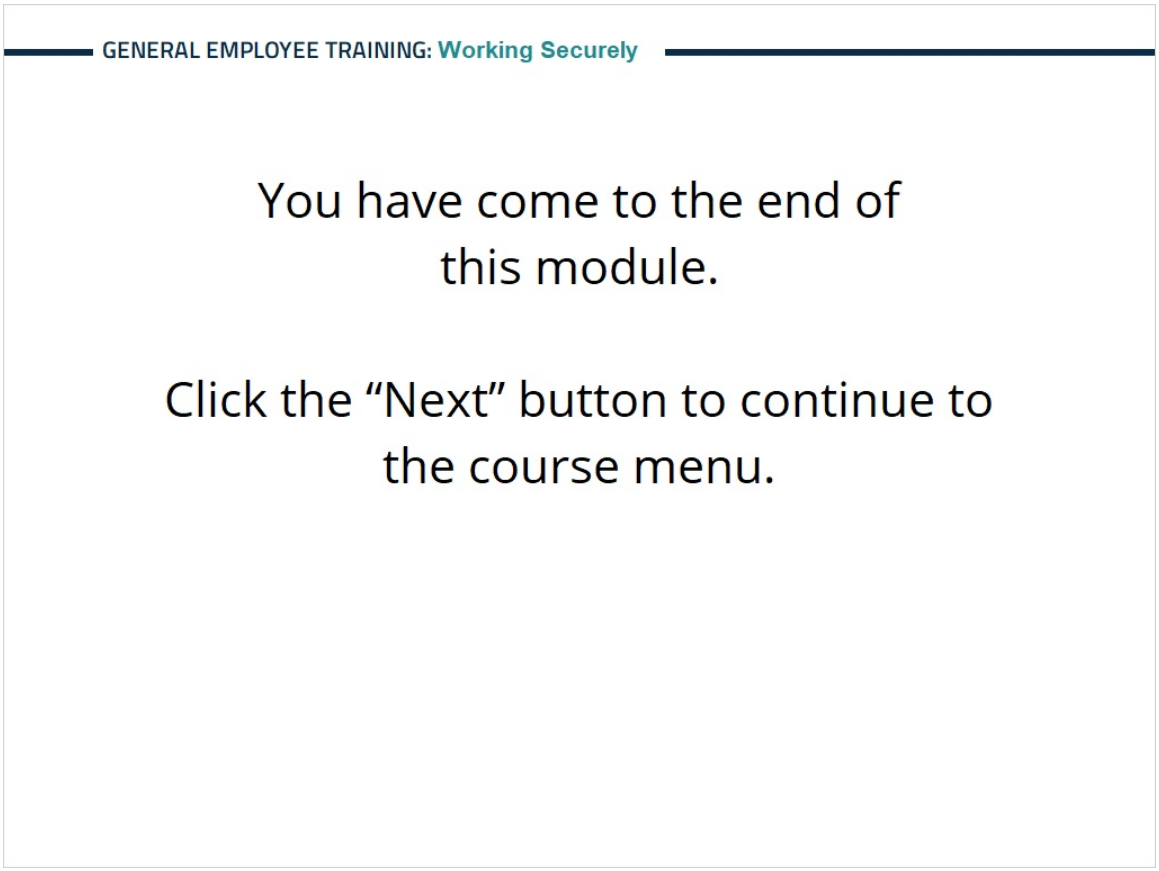
Travel to Sensitive Countries

Any LANL workers who are planning to travel to a sensitive country for pleasure or for business must contact OCI 30 days before they leave. A current list of sensitive countries is available online from the Laboratory's homepage under OCI.

4.40 Untitled Slide



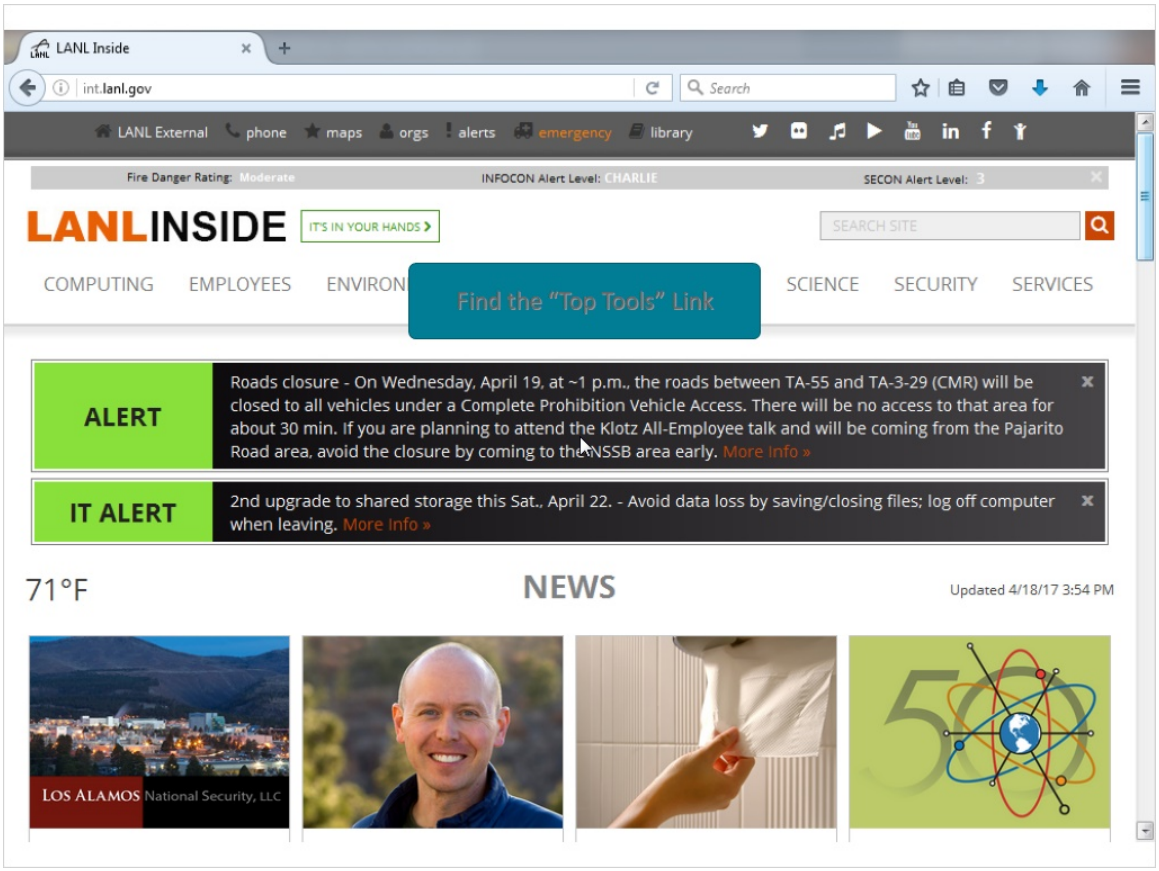
4.41 End Of Module



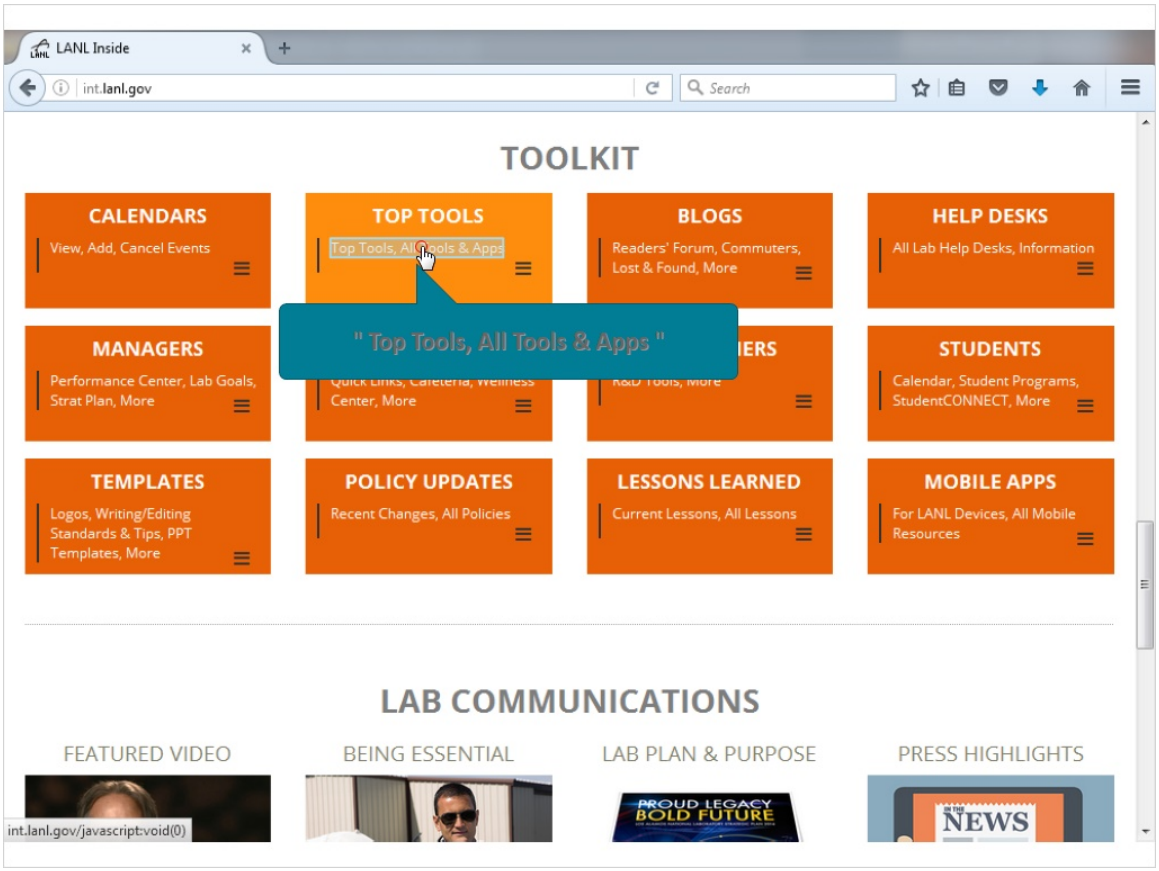
5. Video Scene

5.1 Policy Page

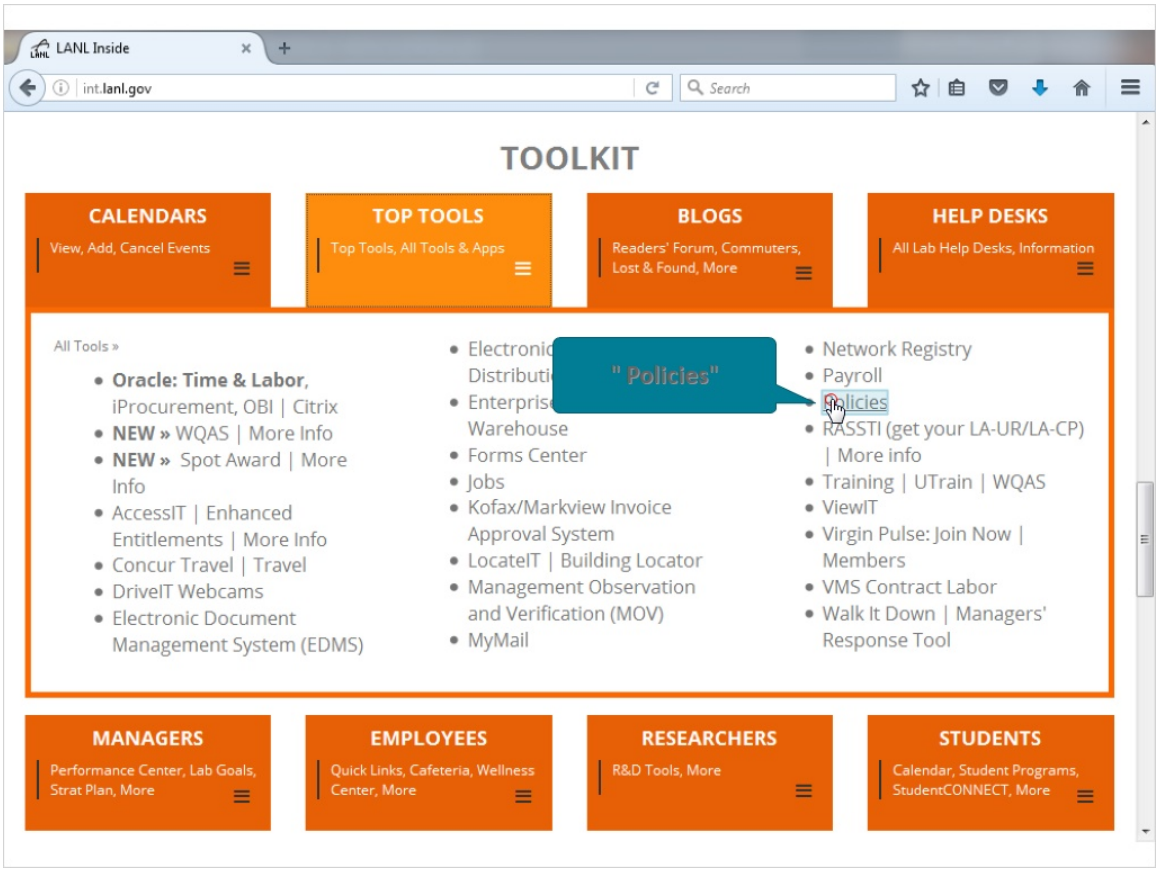
5.2 Scroll the mouse wheel



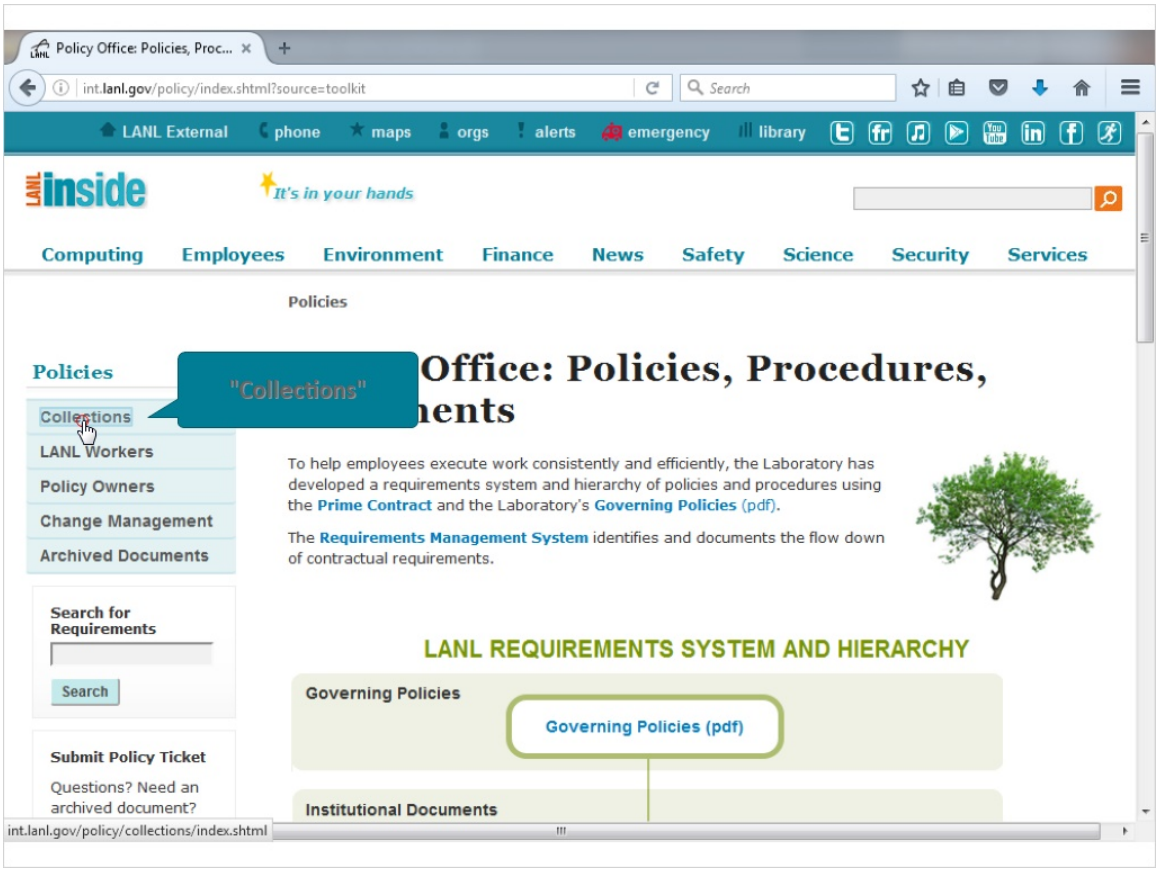
5.3 Click the Top Tools, All Tools & Apps link



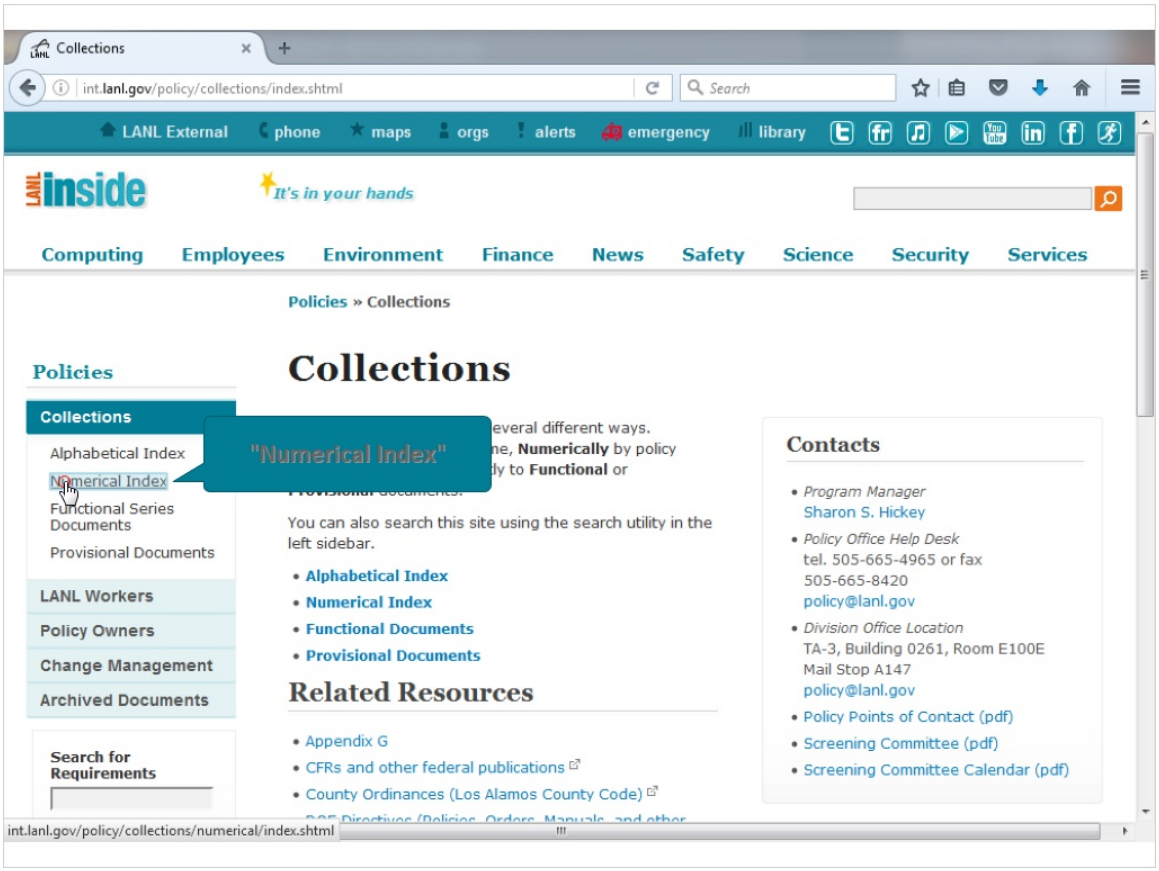
5.4 Click the Policies link



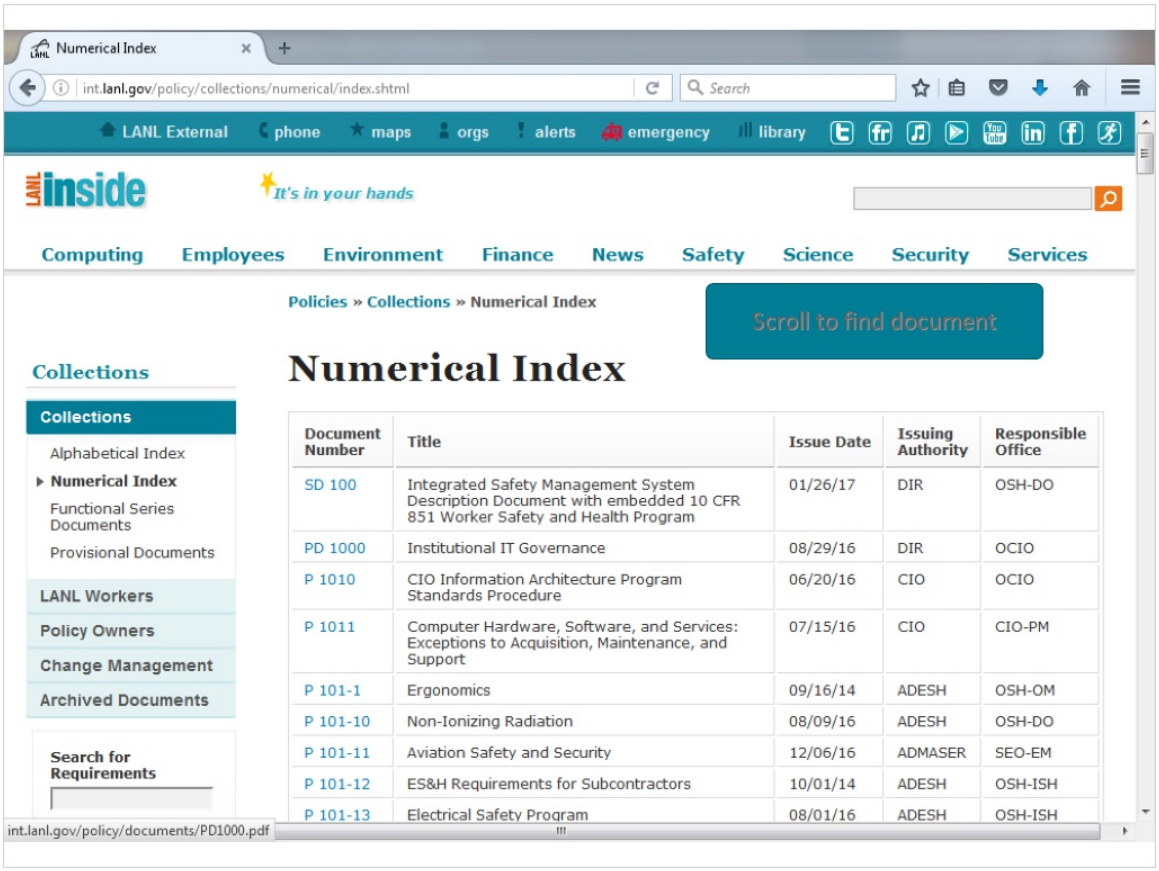
5.5 Click the Collections link



5.6 Click the Numerical Index link



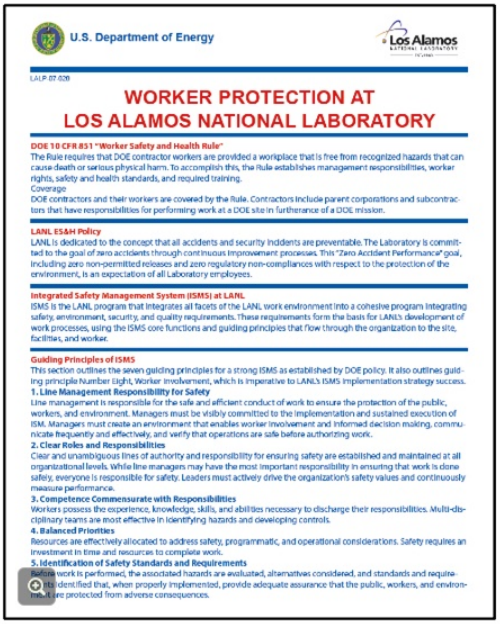
5.7 Scroll the mouse wheel



6. Untitled Scene

6.1 DOE_Doc

Click on
DOE 10 CFR 851
to zoom



U.S. Department of Energy

Los Alamos NATIONAL LABORATORY

LALP-07-020

WORKER PROTECTION AT LOS ALAMOS NATIONAL LABORATORY

DOE 10 CFR 851 "Worker Safety and Health Rule"

The Rule requires that DOE contractor workers are provided a workplace that is free from recognized hazards that can cause death or serious physical harm. To accomplish this, the Rule establishes management responsibilities, worker rights, safety and health standards, and required training.

Coverage

DOE contractors and their workers are covered by the Rule. Contractors include parent corporations and subcontractors that have responsibilities for performing work at a DOE site in furtherance of a DOE mission.

LANL ES&H Policy

LANL is dedicated to the concept that all accidents and security incidents are preventable. The Laboratory is committed to the goal of zero accidents through continuous improvement processes. This "Zero Accident Performance" goal, including zero non-permitted releases and zero regulatory non-compliances with respect to the protection of the environment, is an expectation of all Laboratory employees.

Integrated Safety Management System (ISMS) at LANL

ISMS is the LANL program that integrates all facets of the LANL work environment into a cohesive program integrating safety, environment, security, and quality requirements. These requirements form the basis for LANL's development of work processes, using the ISMS core functions and guiding principles that flow through the organization to the site, facilities, and worker.

Guiding Principles of ISMS

This section outlines the seven guiding principles for a strong ISMS as established by DOE policy. It also outlines guiding principle Number Eight, Worker Involvement, which is imperative to LANL's ISMS implementation strategy success.

1. Line Management Responsibility for Safety

Line management is responsible for the safe and efficient conduct of work to ensure the protection of the public, workers, and environment. Managers must be visibly committed to the implementation and sustained execution of ISM. Managers must create an environment that enables worker involvement and informed decision making, communicate frequently and effectively, and verify that operations are safe before authorizing work.

2. Clear Roles and Responsibilities

Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels. While line managers may have the most important responsibility in ensuring that work is done safely, everyone is responsible for safety. Leaders must actively drive the organization's safety values and continuously measure performance.

3. Competence Commensurate with Responsibilities

Workers possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities. Multi-disciplinary teams are most effective in identifying hazards and developing controls.

4. Balanced Priorities

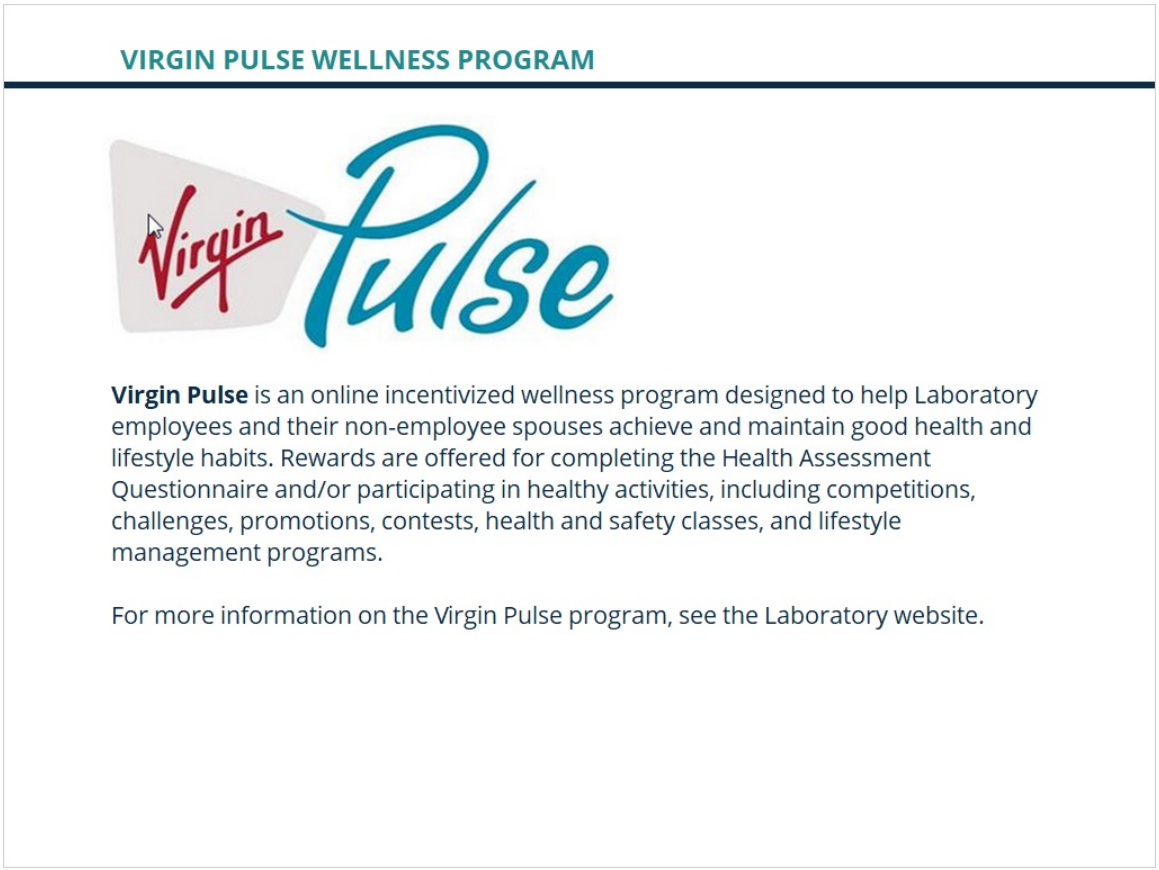
Resources are effectively allocated to address safety, programmatic, and operational considerations. Safety requires an investment in time and resources to complete work.

5. Identification of Safety Standards and Requirements

Before work is performed, the associated hazards are evaluated, alternatives considered, and standards and requirements identified that, when properly implemented, provide adequate assurance that the public, workers, and environment are protected from adverse consequences.

7. Lightboxes

7.1 Virgin Pulse



7.2 Regulating Agencies

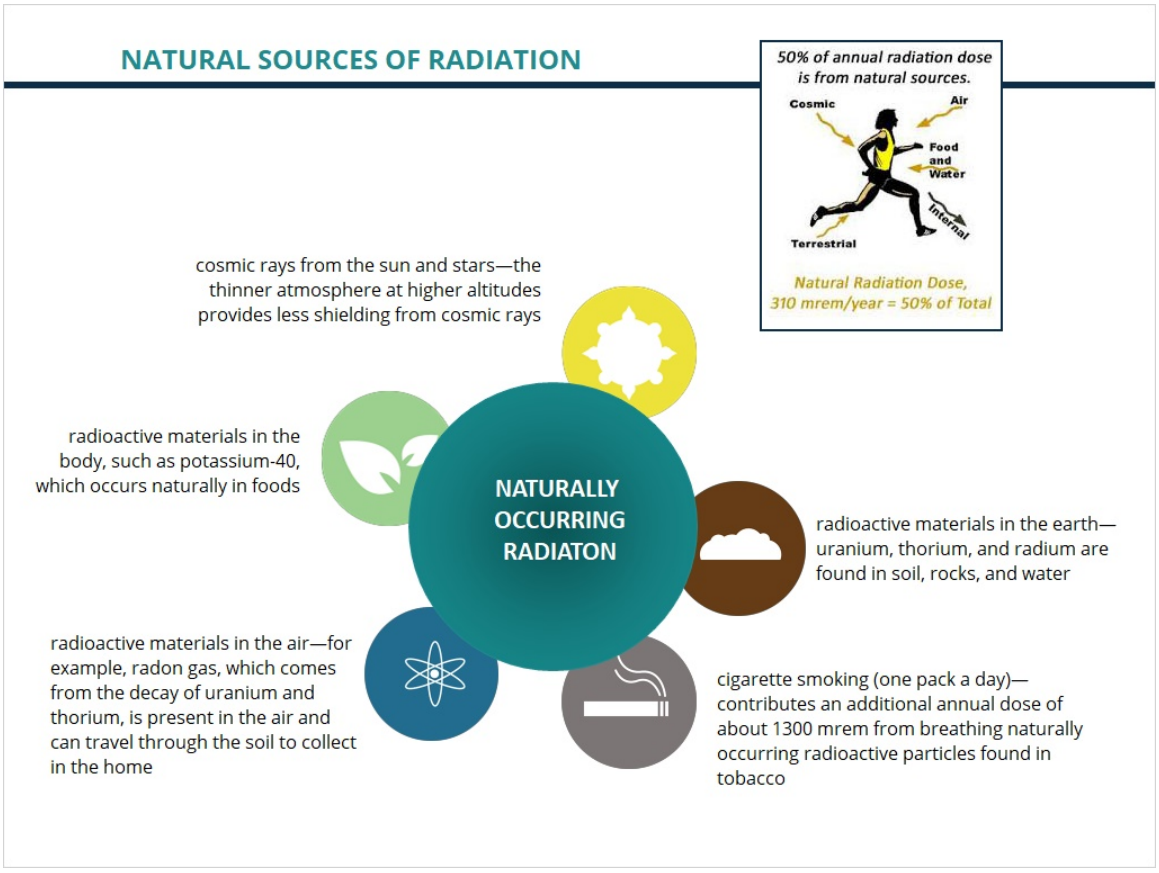
REGULATING AGENCIES

Several agencies establish the regulations, standards, and guidelines for industrial hygiene and safety programs in the workplace.

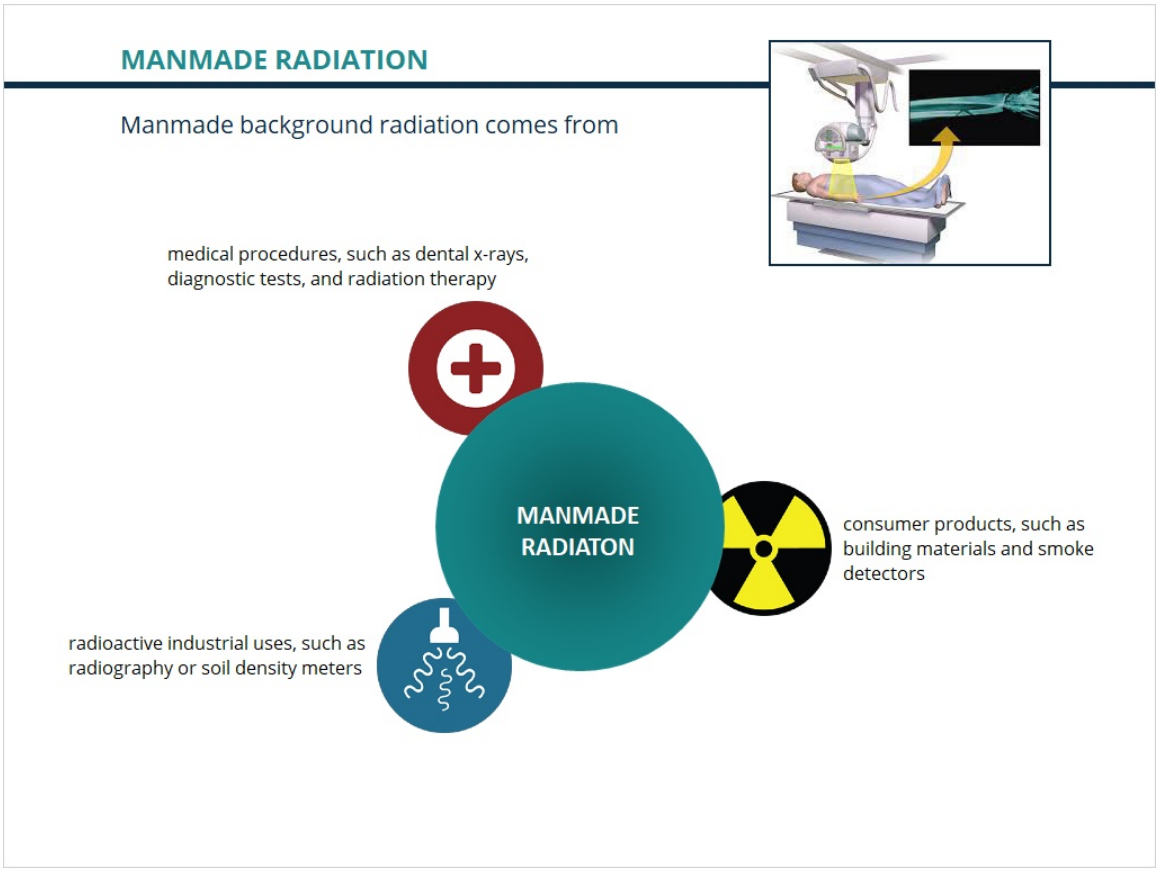
- OSHA—Occupational Safety and Health Administration (issues mandatory regulations that have the power of law). Website: http://www.osha.gov
- ANSI—American National Standards Institute. Website: http://www.ansi.org
- NIOSH—National Institute for Occupational Safety and Health. Website: http://www.cdc.gov/niosh
- ACGIH—American Conference of Governmental Industrial Hygienists. Website: http://www.acgih.org
- DOE—Department of Energy. Website: http://energy.gov
- NFPA—National Fire Protection Agency: https://www.nfpa.org/
- ASHRAE—The American Society of Heating, Refrigerating, and Air-Conditioning Engineers: https://www.ashrae.org/
- ASME— The American Society of Mechanical Engineers: https://www.asme.org/

9. Untitled Scene

9.1 Natural Radiation



9.2 Manmade Radiation



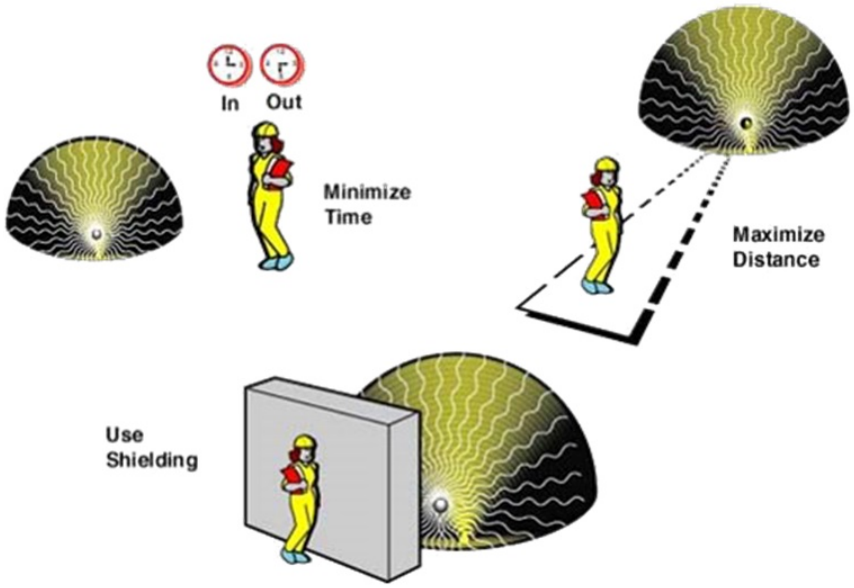
10. media

10.1 reducing external

REDUCING EXTERNAL DOSE

The external dose is reduced by the following basic protective measures:

- minimizing the time spent near the source of radiation
- maximizing the distance from the source of radiation
- using shielding between the body and the source of radiation



10.2 reducing internal dose

REDUCING INTERNAL DOSE

Your internal dose is reduced by the control methods that keep radioactive materials from entering the body through the lungs, mouth, or skin, including:

- engineering controls (gloveboxes, hoods, and ventilation systems)
- administrative controls [work control procedures, radiological work permits (RWPs), and work practices]
- PPE (coveralls, gloves, booties, hats, and respirators)

Engineering

Administrative

PPE

11. Property

11.1 Your Responsibilities

USING GOVERNMENT PROPERTY

Your Responsibilities

You may use government property, including vehicles, only for official use. To drive a government vehicle, you must possess a valid driver's license, be at least 18 years of age, and have no special driving restrictions (such as an interlock system). You are responsible for the proper use, control, and physical protection of all government property. You will be required to sign an accountability statement that lists the property-numbered items assigned to you. By signing this statement, you agree to take responsibility for the items listed on this statement.

The property administrator (PA) for your organization is available to assist you with all property-related issues, such as transporting government property only for official use. All property transported or shipped to a foreign country must be approved first by Export Control.

If government property is lost or stolen, contact your PA and the LANL Investigative Services Team within 24 hours. Loss of or damage to government property resulting from deliberate or negligent acts may result in disciplinary action, up to and including termination. Thefts and misuse of government resources are federal offenses subject to criminal prosecution and may also result in disciplinary action, up to and including termination.

11.2 Political Activities

POLITICAL ACTIVITIES

You may discuss politics at LANL, as long as the discussion does not interfere with your work and you make it clear that you are giving your opinion and not a position or policy of the Laboratory.

Your participation in political activities on your own time is your business. However, you may not campaign, solicit, or accept political contributions on LANL premises.

Employees may wear campaign buttons and discuss their political views with each other; however, overt politicking must be kept off Laboratory premises. The following are considered to be political campaigning:

1. handing out campaign literature, buttons, or bumper stickers for your favorite candidate or cause; and
2. asking other workers for campaign donations.

For more information, see P725, *Political Activities and Interactions with Elected Officials.*

11.3 Gambling

GAMBLING AT WORK

You may not gamble on Laboratory premises, nor may you use Laboratory equipment, including computers, to gamble. The following scenarios are examples of gambling:

- coordinating a football pool program at work,
- conducting or taking part in an office lottery,
- playing a card game for money during your lunch hour on LANL property, or
- selling or buying a raffle ticket (even for a good cause).

See P731, *Discipline.*

11.4 Workplace Violence

WORKPLACE VIOLENCE

Violent behavior and threats of violence are unacceptable conduct and are prohibited at the Laboratory. See P724, *Workplace Violence*, for more information. Examples of workplace violence include

- hostile or aggressive physical contact with another person,
- a statement or body gesture that threatens harm to another person, or
- any conduct that would cause a reasonable person to believe that he or she is under threat of harm.

Call 911 if you believe that immediate action is required for a life- or injury-threatening situation.

11.5 Reporting

REPORTING IMPROPER ACTIVITIES

LANS encourages workers to bring forward good-faith concerns of an improper activity or of a situation that constitutes a threat to security, health, safety, the environment, or quality and to have those concerns addressed in an independent, objective manner. LANS investigates reports of improper activities in a confidential manner to protect workers from retaliation for reporting such activities.

You may report allegations of improper activities by

- addressing workplace concerns with your manager;
- calling LANL's Employee Concerns Program (ECP) 24-hour helpline at 5-9999;
- sending an e-mail to ecp@lanl.gov;
- sending a written concern to MS D449, Attention: Helpline; or
- calling a meeting with EA-Ethics personnel, who are located at TA-00, Building 787, 125 Central Park Square, 1st floor.

See P793, *Employee Concerns*.

11.6 Harrassment

HARRASSMENT

LANL is committed to taking reasonable steps to provide a work environment that is free from all forms of harassment on the basis of sex or any other legally protected category.

Sexual harassment is unacceptable conduct and prohibited at LANL. Unwelcome sexual advances, requests for sexual favors, and other behavior or comments of a sexual nature that affect employment status or work performance or create a hostile work environment constitute sexual harassment. The display of sexually oriented visuals or images can also constitute sexual harassment and is prohibited.

The Laboratory prohibits sexual relations between a supervisor and a subordinate, regardless of whether the relationship constitutes sexual harassment or is consensual. LANL also prohibits sexual relations between a mentor and a mentee who are participants in a formal Laboratory mentorship program.

See P721, *Harassment, Including Sexual Harassment.*

11.7 Smoking

SMOKING

You may not smoke, which includes using electronic cigarettes, in government vehicles, inside Laboratory buildings, and inside offsite space leased by LANL. Smoking is also prohibited within 25 feet (horizontal and vertical) of doors, air intake vents, or operable windows of LANL buildings.

Smoking Areas

Facility Operations Directors (FODs) or other responsible line managers (RLMs) may provide designated smoking areas outside of LANL buildings or LANL-leased space.

- Designated smoking areas must be outfitted with ash receptacles and may include benches, tables, or other amenities.
- FODs may impose seasonal smoking restrictions in designated smoking areas if needed to minimize wildfire hazards.
- Smoking in areas near Laboratory-leased space or in areas occupied by LANL under other types of agreements is subject to the requirements of the property owner or landholder.
- Smoking is allowed at the Laboratory outside of buildings and in undeveloped areas, unless expressly prohibited.
- Smoking is allowed in covered parking structures, unless otherwise prohibited.
- Smokers may not dispose of embers, cigarette butts, matches, or other trash on the ground or in open water (streams, storm runoff, puddles, or landscaping features).
- Smokers may smoke in privately owned vehicles, if done in areas where smoking is not otherwise prohibited, but you may not flick ashes, embers, cigarette butts, or other smoking materials out of vehicles while at the Laboratory.

11.8 Government Property 2

MISUSING GOVERNMENT PROPERTY

The following scenarios are examples of misuse of government property or resources:

- using LANL fax machines to advertise or solicit for a private business;
- using LANL mail services for personal mail;
- using government equipment to produce mementos, such as those for birthdays and retirements;
- taking home LANL supplies or equipment that your group no longer needs;
- using LANL computers to access non-work-related sites on the Internet, including those for pornography, gambling, and private business concerns;
- making illegal copies of computer software;
- using a government vehicle for non-work-related trips; and
- using LANL e-mail or mailing lists to send inappropriate material (sexually explicit, defamatory, etc.) to others.

Employees are generally given latitude to access the Internet on an incidental basis, such as to review the news.

LANL telephones, including cell phones, are for official business use. Make personal calls only when you must, and keep them brief. Avoid making personal long-distance or international calls.

12. Measure Radiation

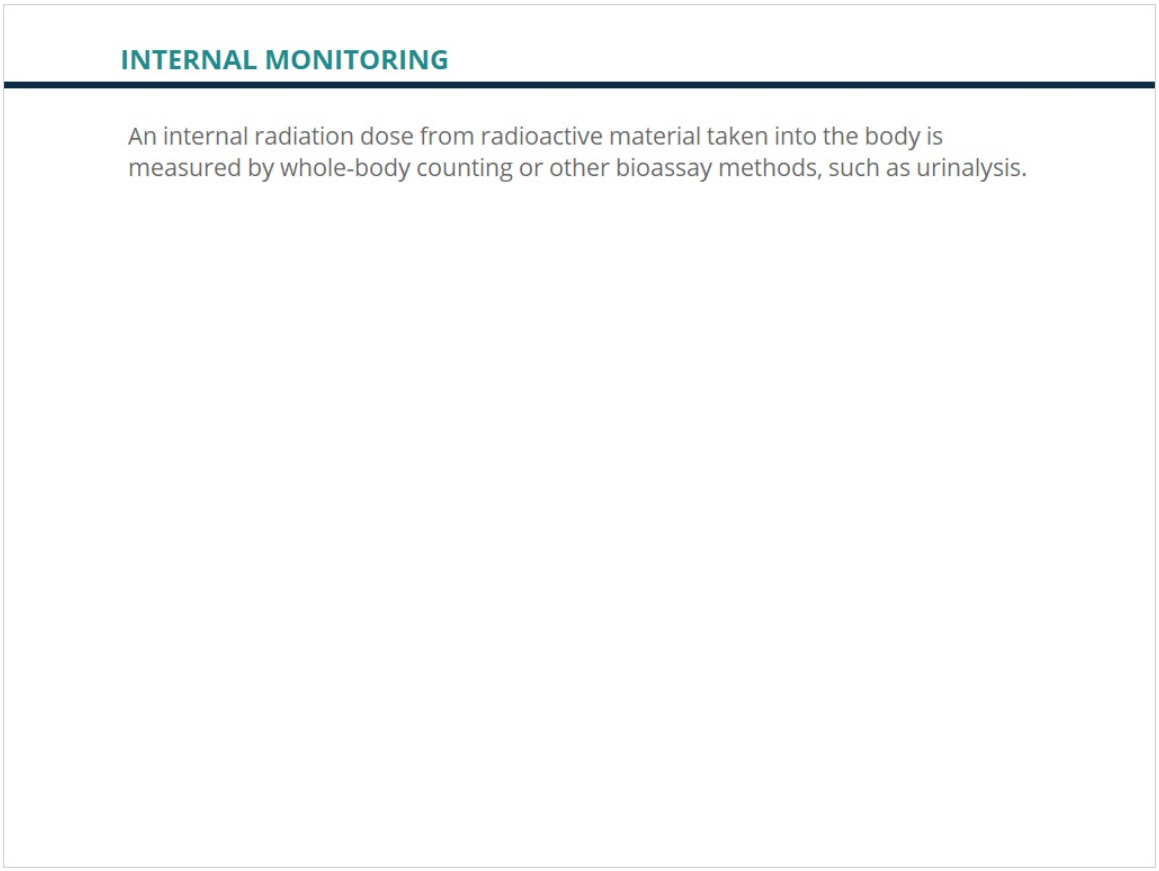
12.1 External Monitoring

EXTERNAL MONITORING

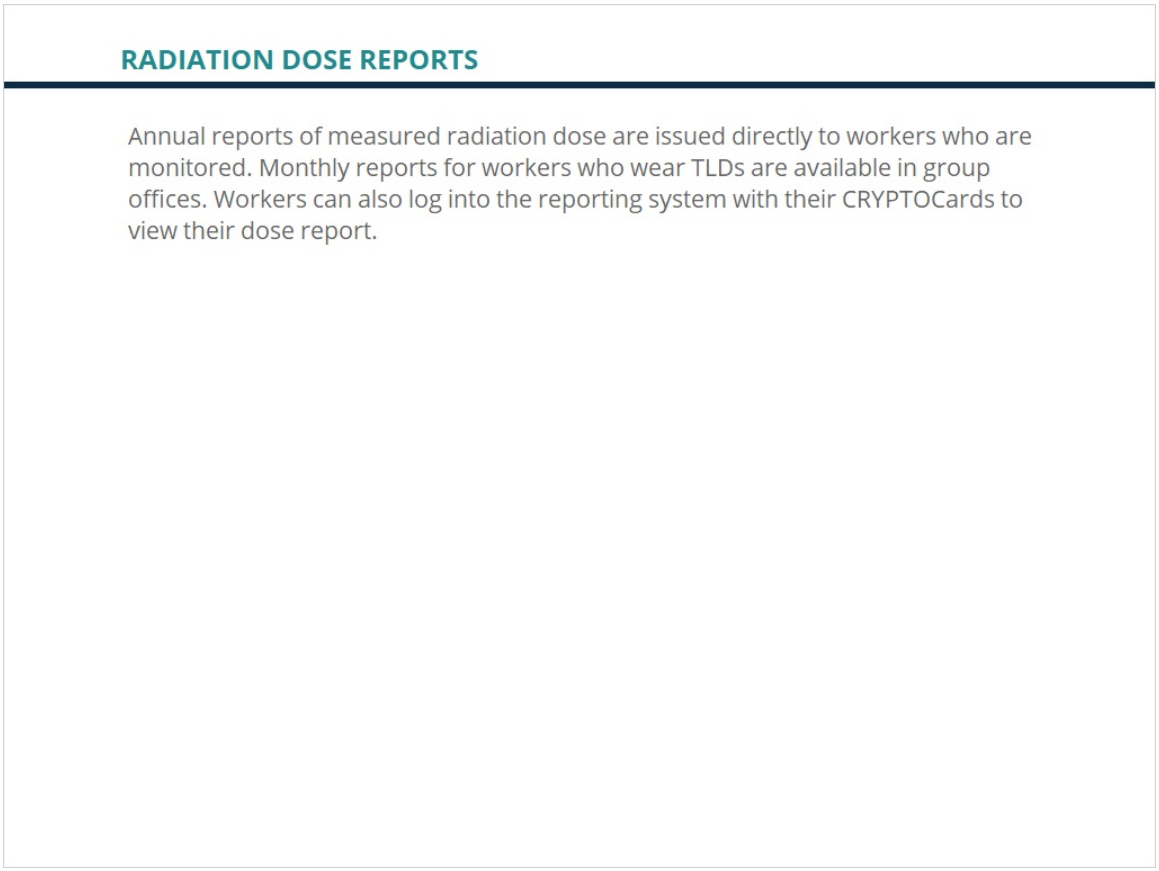
The thermoluminescent dosimeter (TLD) is the primary device used to measure the external radiation dose from sources outside the body. TLDs must be worn between the neck and the waist, with the LANL emblem facing away from the body. Proper care of the TLD, including its identification label, is important to prevent delays in badge processing. Other types of dosimeters may also be issued depending on the type of radiation the worker is expected to encounter.

Workers must not travel with LANL dosimeters, unless their use is authorized by Radiation Protection Programs (RP-PROG). Do not pack dosimeters that were approved for travel in checked luggage. If dosimeters are taken on travel mistakenly, notify RP-PROG promptly.

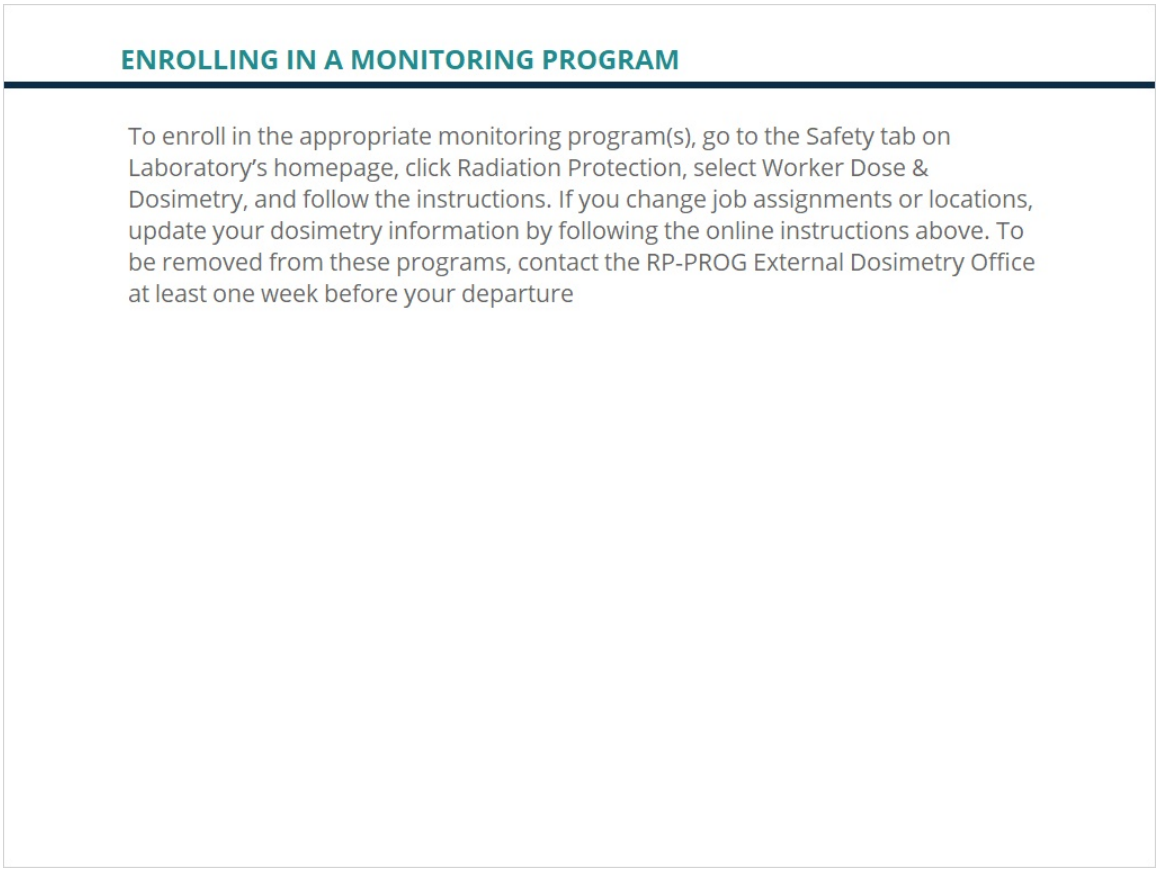
12.2 internal monitoring



12.3 dose reports



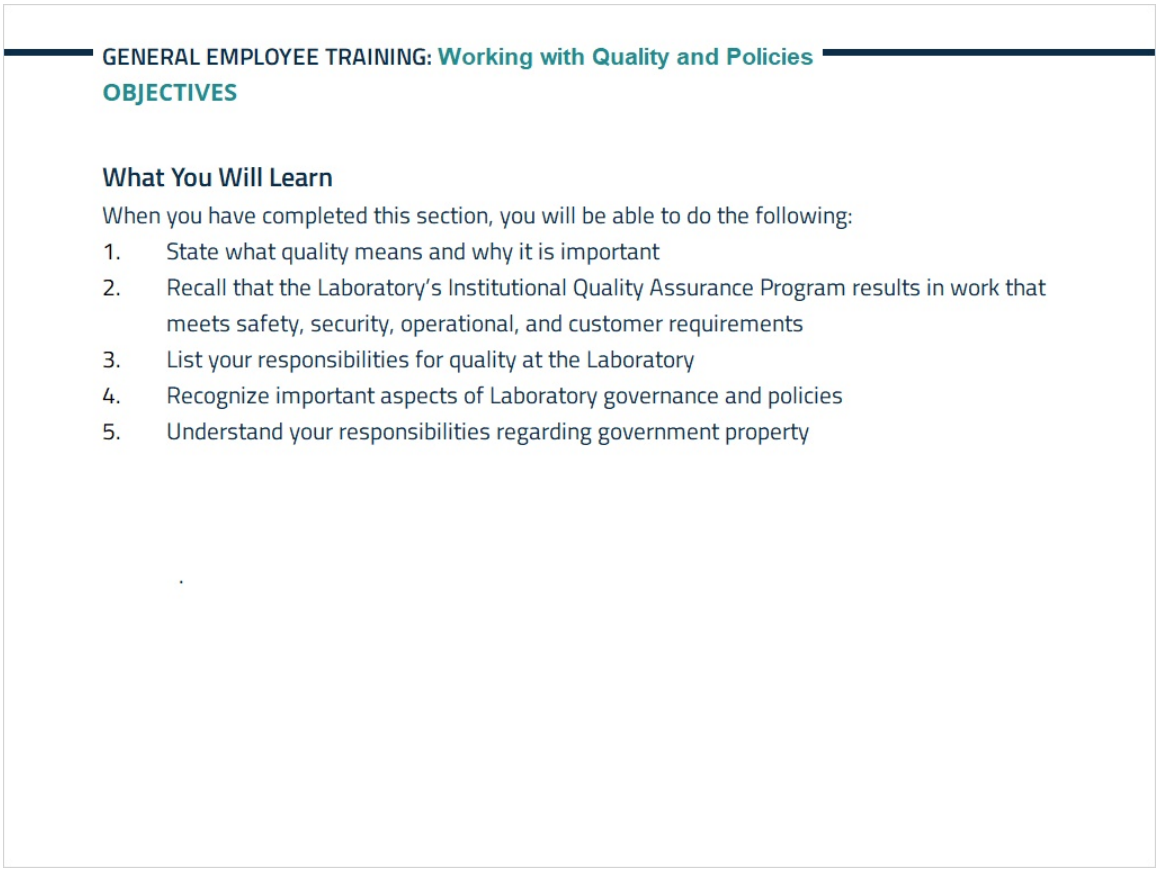
12.4 monitoring program



13. Quality Assurance Process

13.1 Introduction

13.2 Objectives



13.3 What is Quality?

GENERAL EMPLOYEE TRAINING: **Working with Quality and Policies**

WHAT IS QUALITY?

The American Society of Quality defines quality as "a product or service free of deficiencies; conformance to requirements." LANL defines quality as "a condition achieved when an item, service, or process meets or exceeds the user's requirements and expectations." Quality is meeting your customer's requirements and expectations.

LANL has contractual requirements to ensure quality in all operations. When quality standards are not met, tragic consequences often occur to humans, wildlife, or the environment.

Quality assurance organizations at LANL provide quality management, weapons quality engineering, receipt inspection, quality assurance, project management, quality control, and independent assessment services to customers throughout the Laboratory. The Institutional Quality and Performance Assurance Division (IQPA) Division has development and oversight responsibility for implementing LANL's Quality Assurance Program (QAP).

13.4 The Laboratory's Quality Assurance Program

GENERAL EMPLOYEE TRAINING: **Working with Quality and Policies**

THE LABORATORY'S QUALITY ASSURANCE PROGRAM

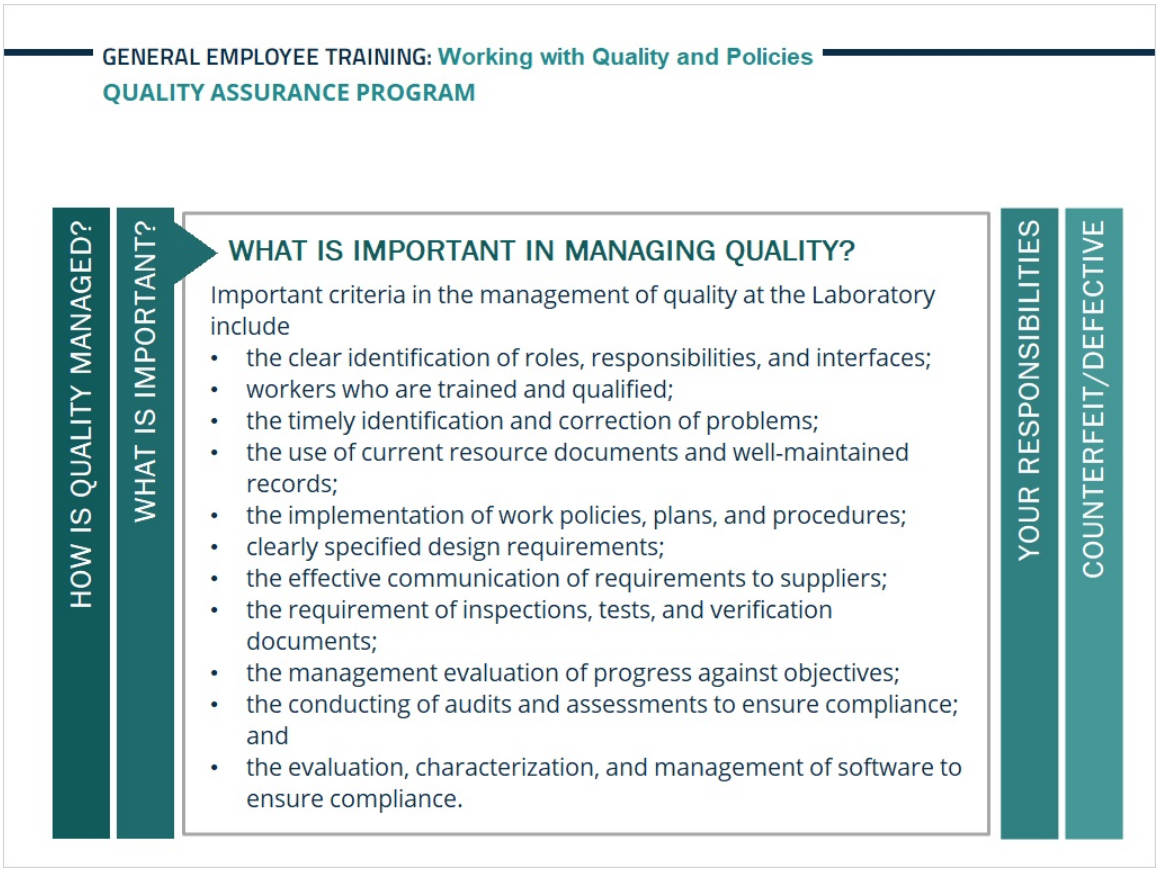
The Institutional QAP is the Laboratory's formal program of good practices for performing activities in a controlled manner and in accordance with technical standards and operational safety requirements. These practices are integrated in LANL's three-tiered requirements system:

- Governing Policies: high-level policies issued by the director that govern Laboratory work across the institution.
- Institutional Documents: system descriptions, program descriptions, procedures, and requirements notices issued by the Director's Office or directorates that apply to everyone in the institution or to broad cross-organizational functions.
- Local Documents: functional series documents and local instructions that define processes, operations, or other information needed to perform certain work.

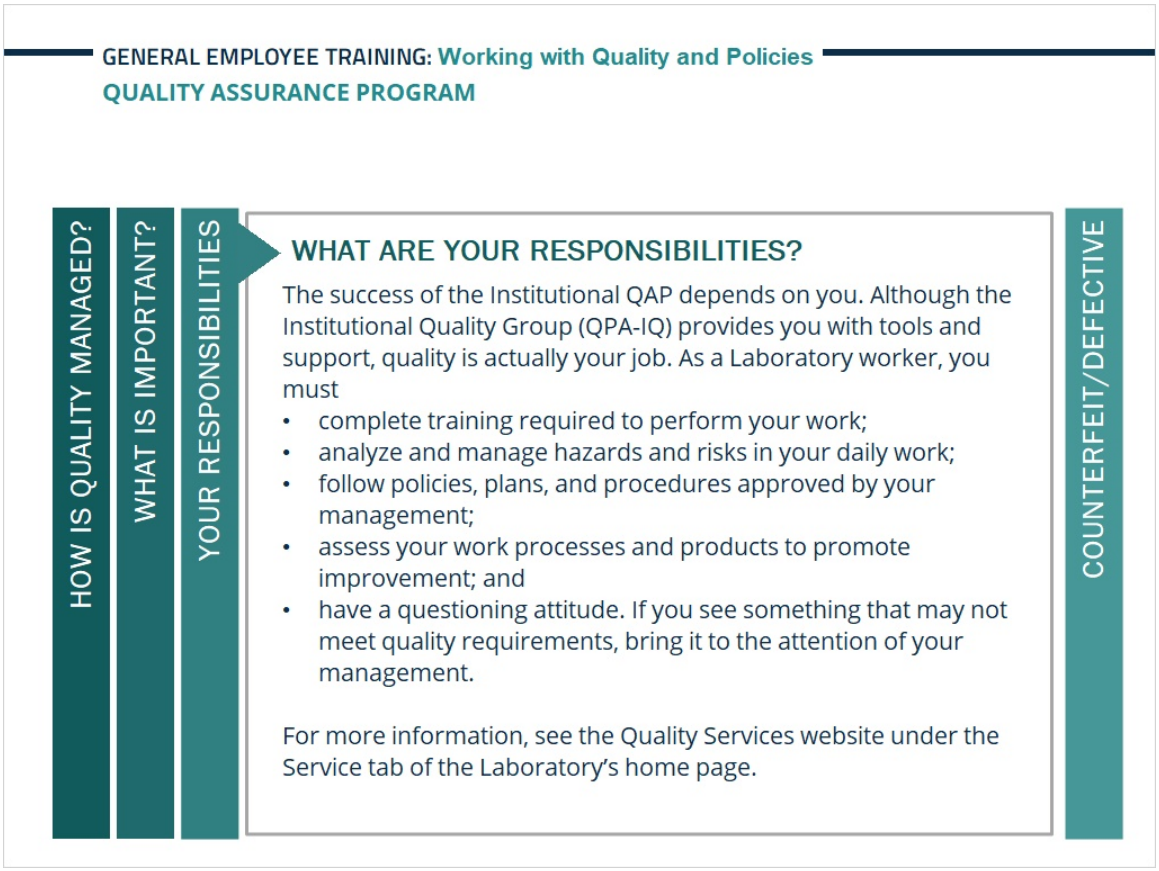
The Laboratory has many different types of work activities, all of which are governed under the umbrella of the Laboratory's QAP defined in SD330 LANL Quality Assurance Program. In addition to the Institutional QAP, these activities can have specialized sub-tier, documented quality programs, including research and development, weapons design and manufacturing, engineering, and construction.

13.5 Quality Assurance Program

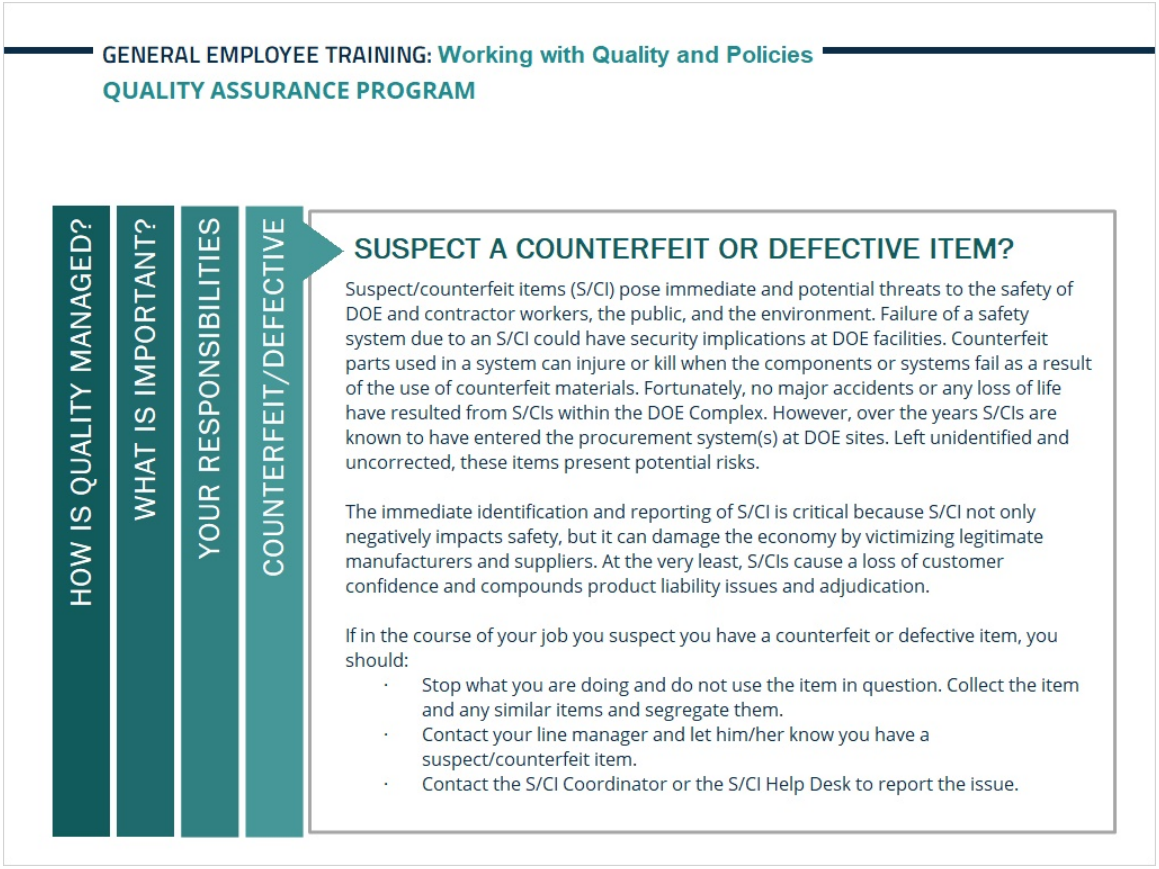
13.6 Quality Assurance Program



13.7 Quality Assurance Program



13.8 Quality Assurance Program



13.9 Governance and Policy

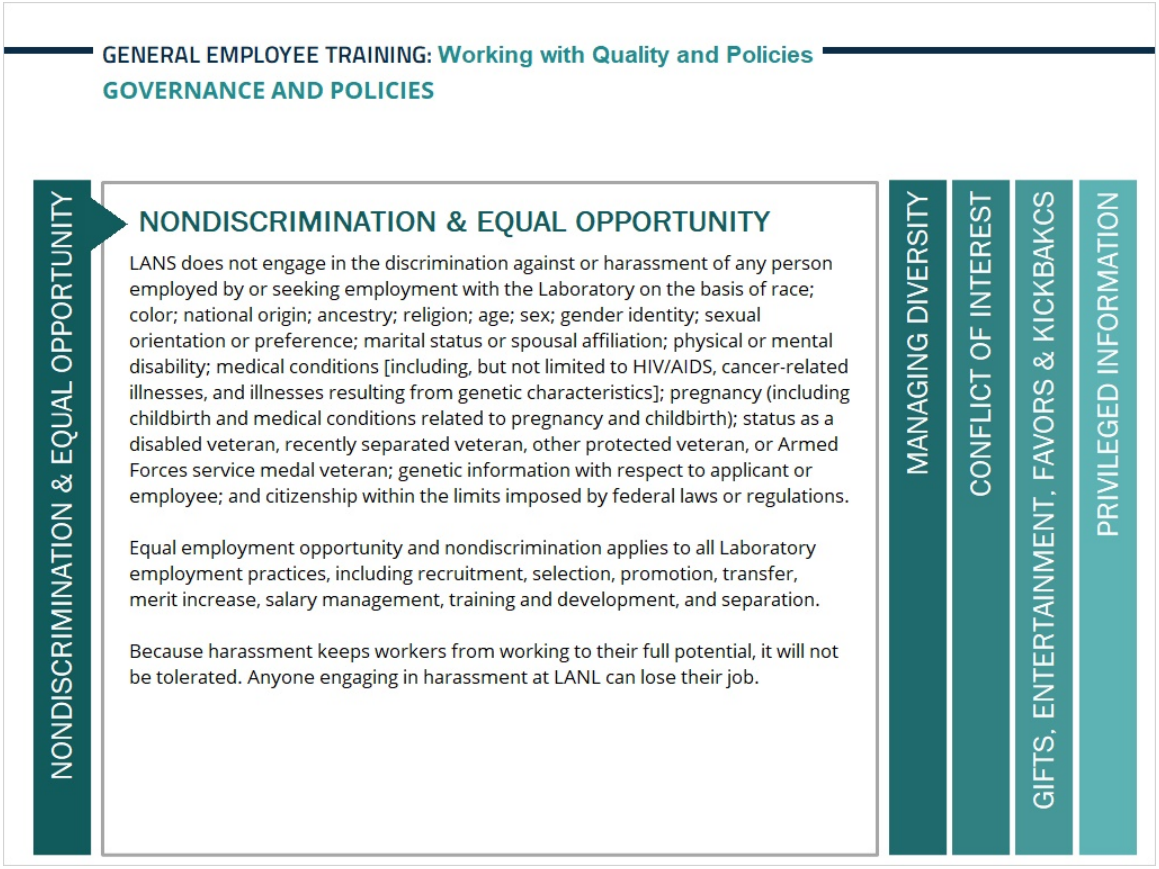
GENERAL EMPLOYEE TRAINING: **Working with Quality and Policies**

GOVERNANCE AND POLICIES

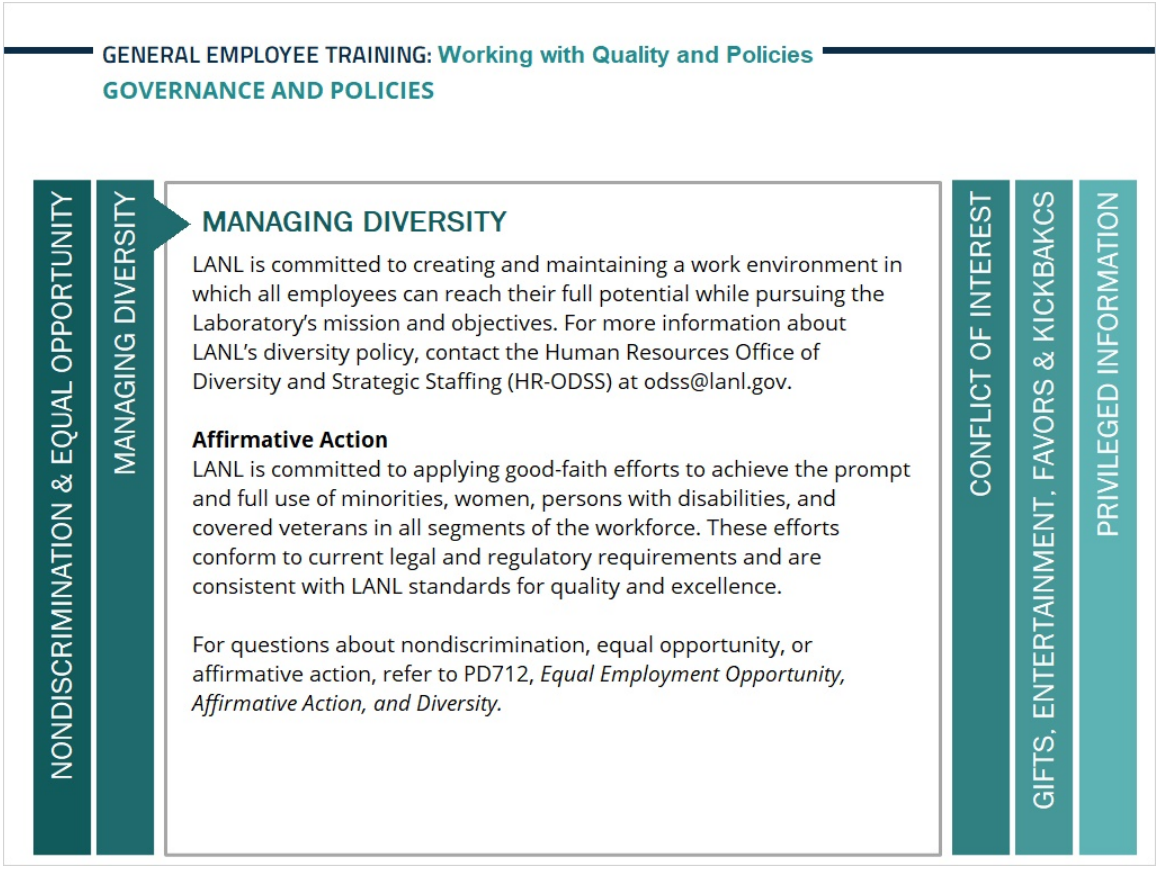
The Laboratory operates under a federal management and operations contract with the DOE/NNSA called the Prime Contract. The contract is performance-based, with mission deliverables and operational requirements. A Requirements Management System (https://rms.lanl.gov/RMS) identifies and documents the down flow of contractual requirements from the Governing Policies mentioned earlier in this module. The Laboratory has developed a requirements system and hierarchy of institutional documents to help employees execute work consistently and efficiently. These institutional documents include system descriptions (SDs), program descriptions (PDs), and procedures. LANL's policies and procedures can be found on the Policy Office link of LANL's home page.

In the next few screens, we will talk about some of the Laboratory's policies that might affect you. LANL employment policies generally do not apply to contract workers. If you are a contract worker, you should talk to your employer for information about the terms and conditions of your contract.

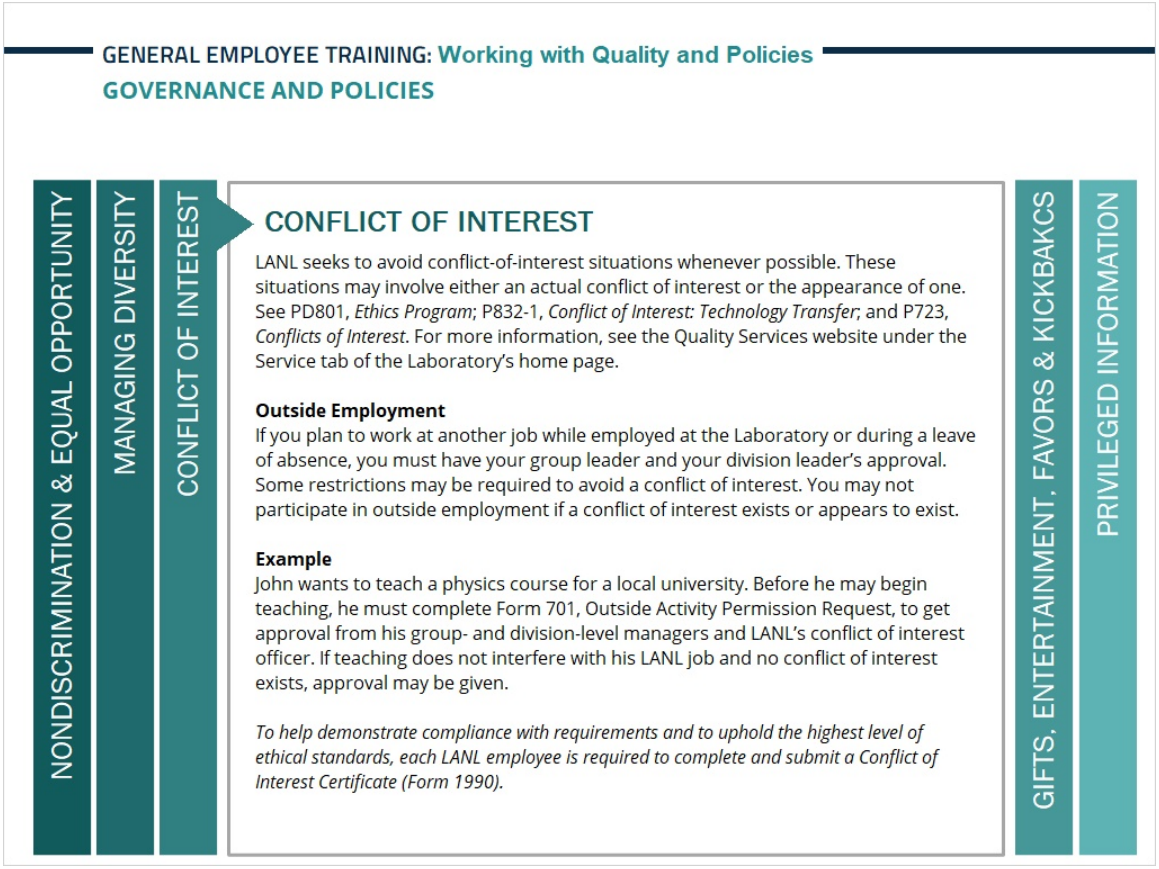
13.10 Governance and Policy



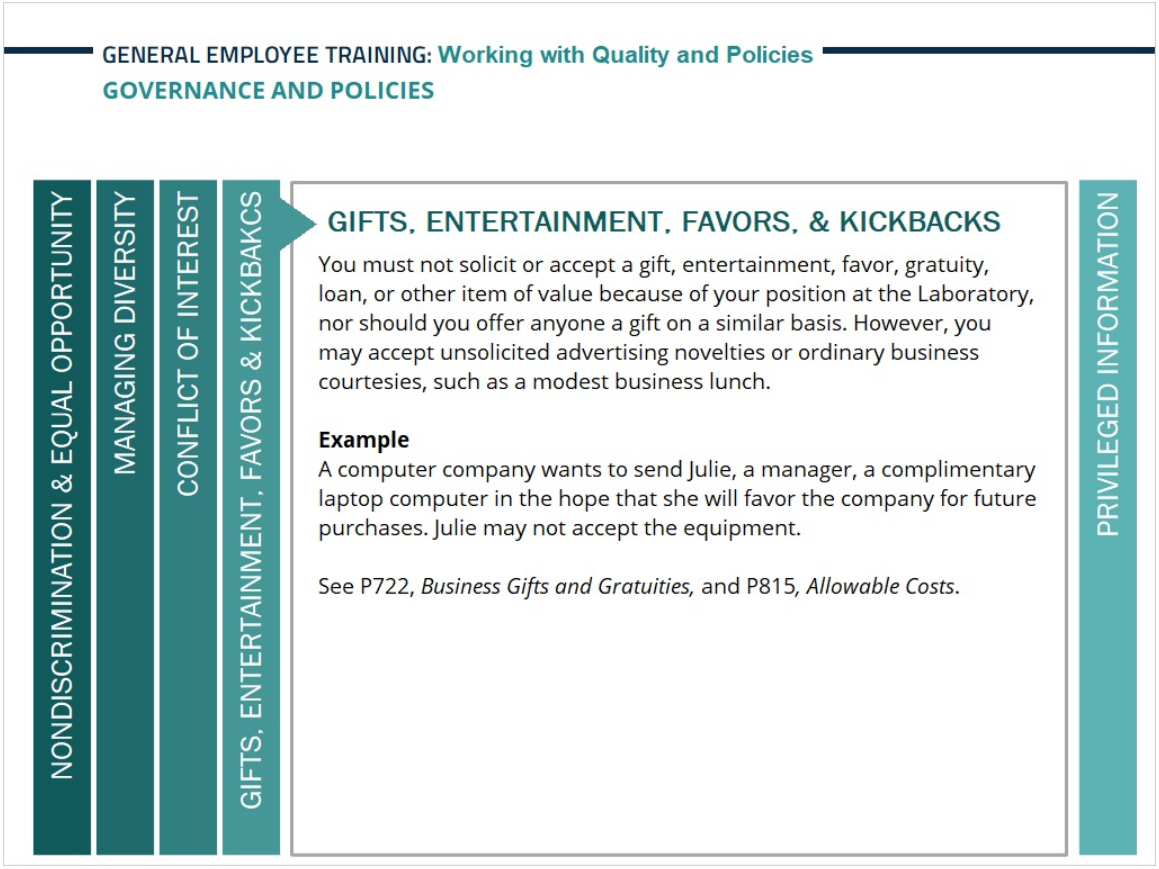
13.11 Governance and Policy



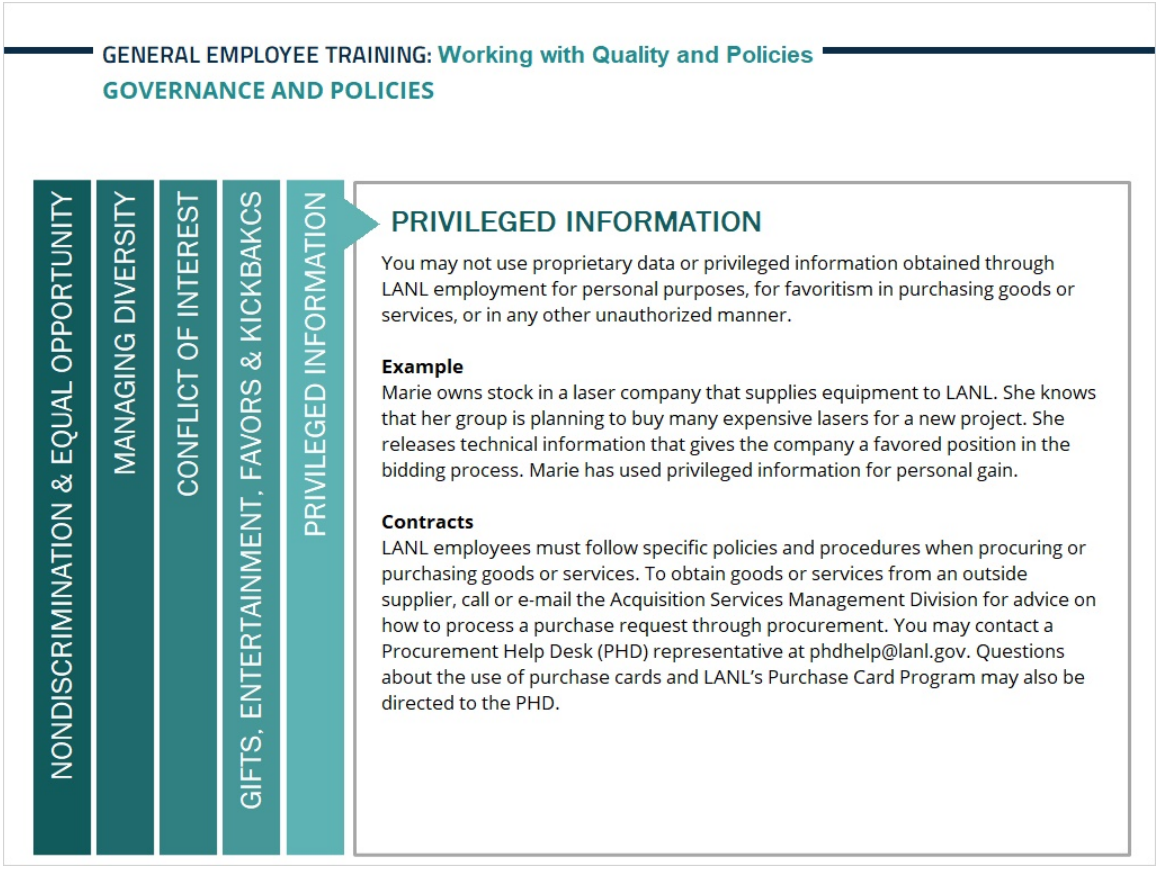
13.12 Governance and Policy



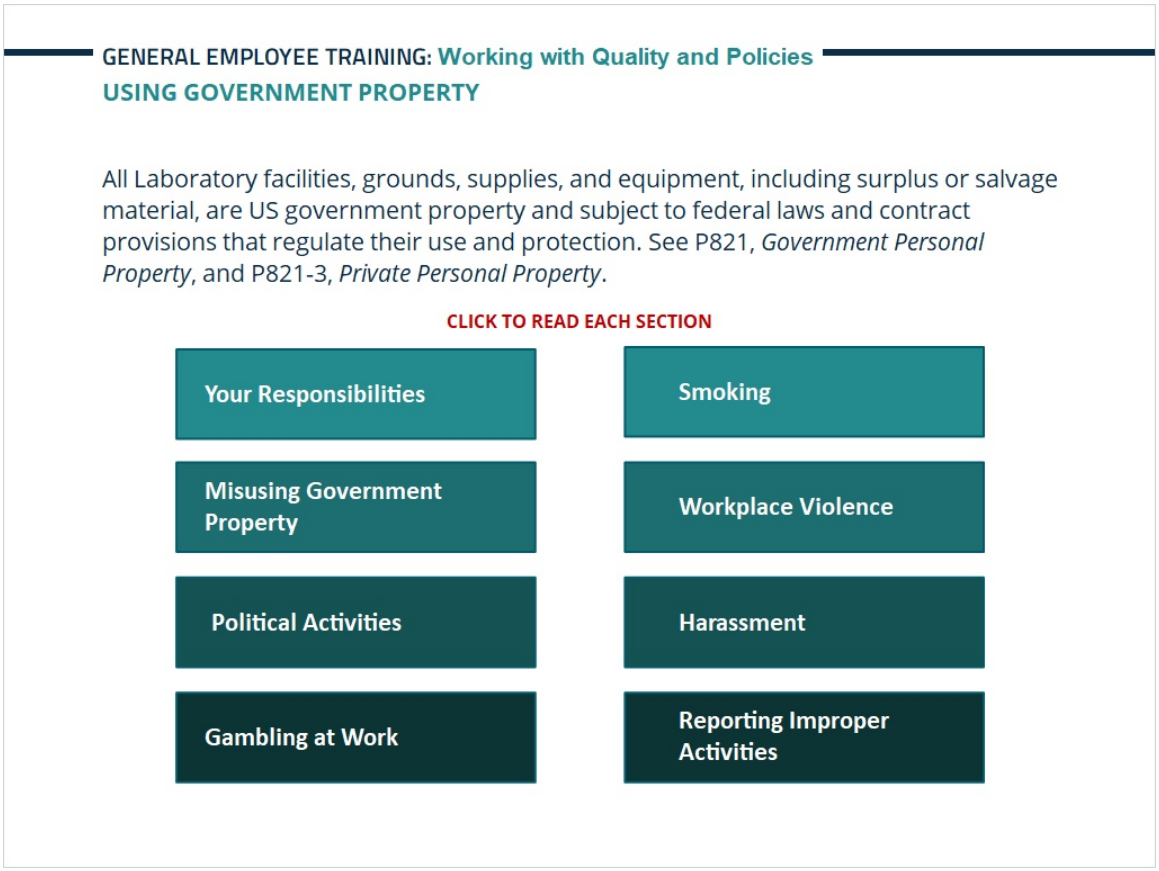
13.13 Governance and Policy



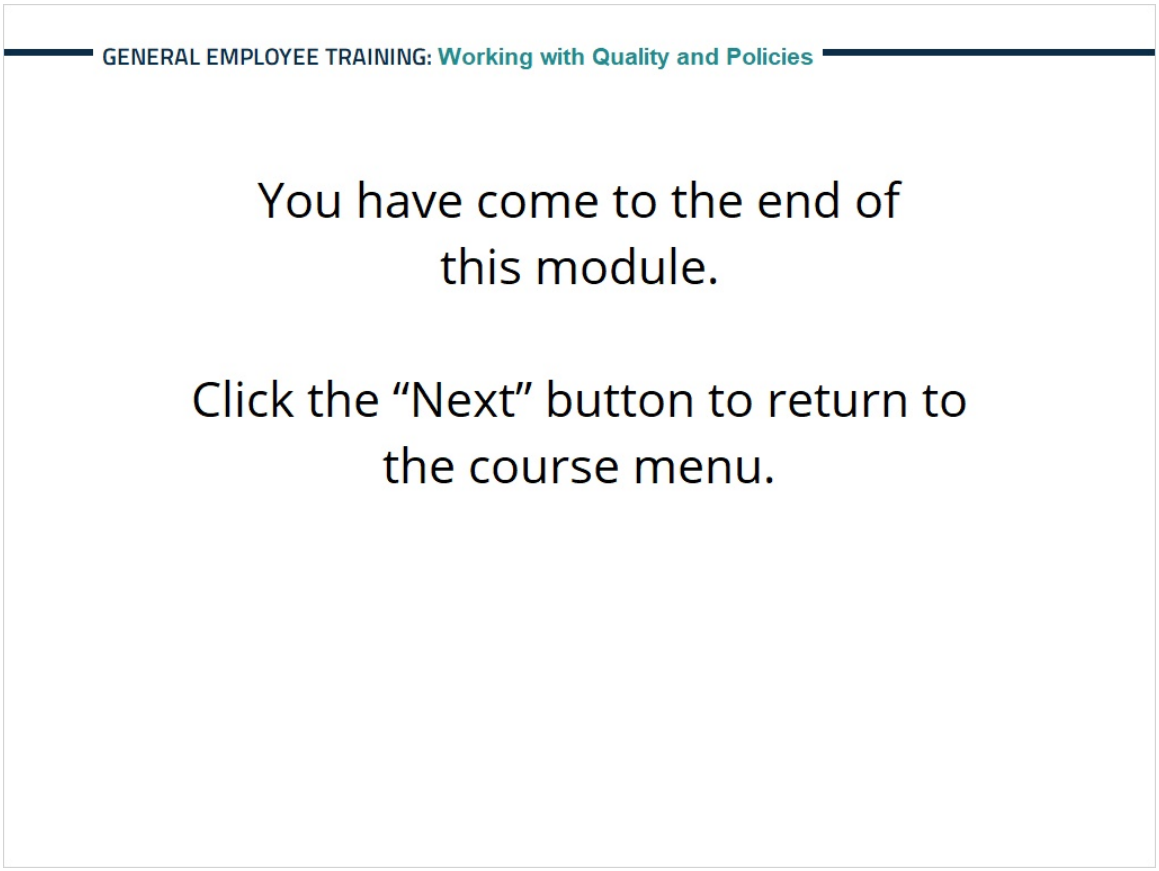
13.14 Governance and Policy



13.15 Using Government Property

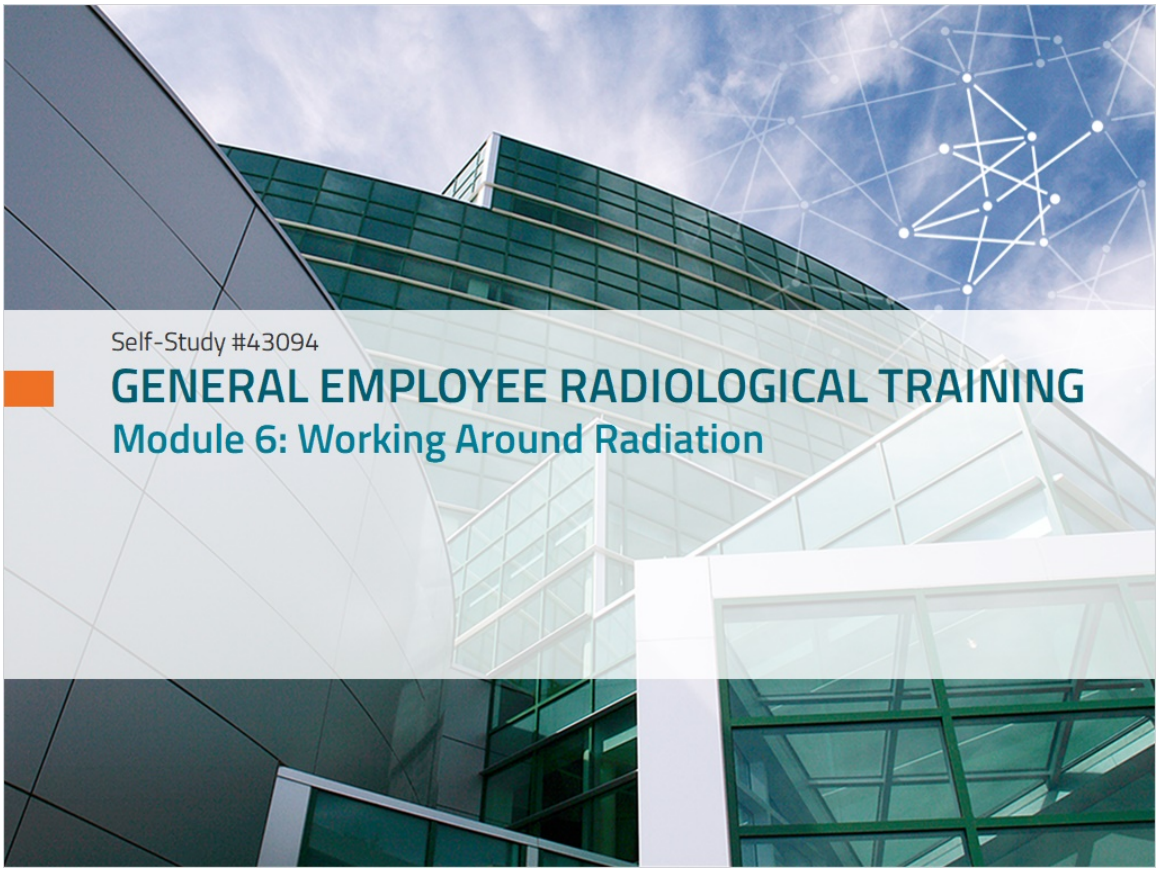


13.16 Course Completion



14. Working around Radiation

14.1 Introduction



14.2 Objectives

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): **Working Around Radiation**

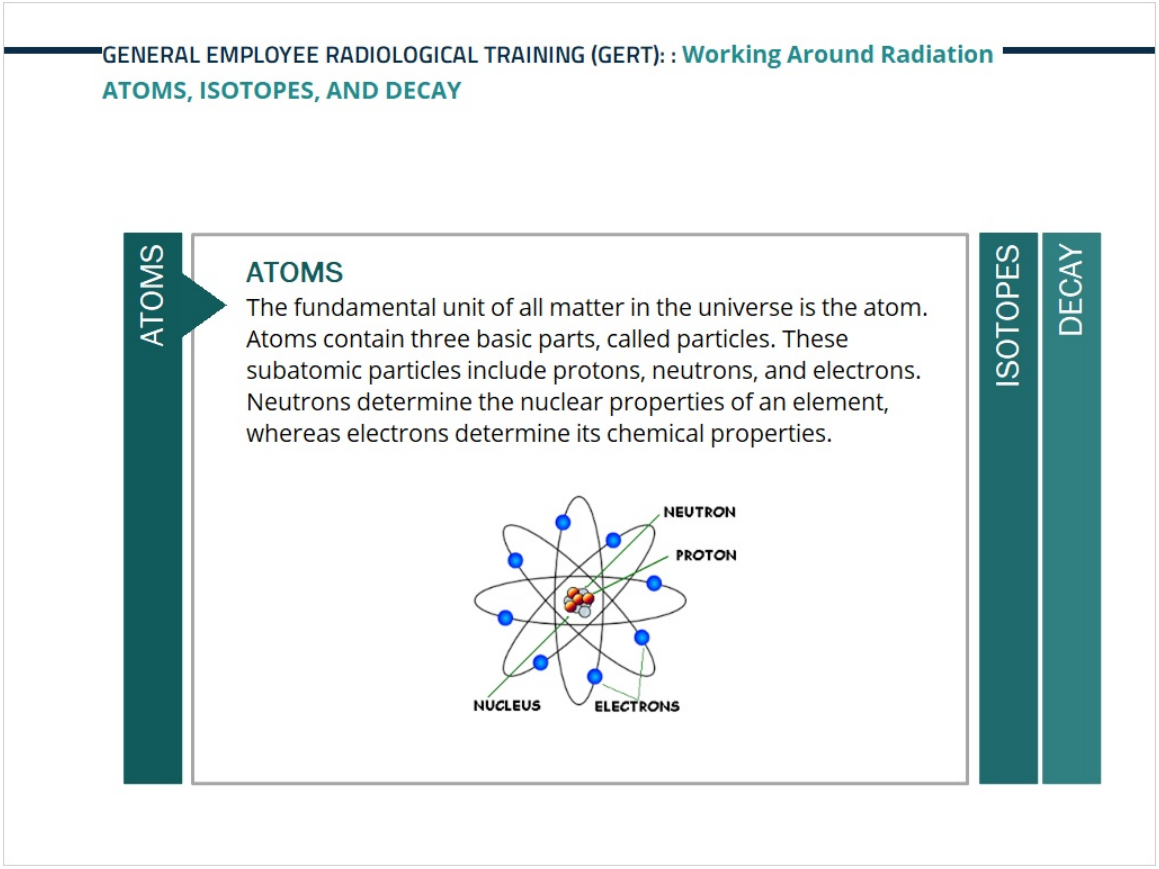
OBJECTIVES

What You Will Learn

When you have completed this section, you will be able to do the following:

1. Distinguish between different sources of background ionizing radiation
2. Recognize the biological effects of ionizing radiation and the risks of exposure
3. Demonstrate knowledge of how to declare a pregnancy to appropriate parties in the Laboratory
4. Name radiation dose limits per year for occupational exposure
5. Recall the two methods used to monitor workers' radiation doses at the Laboratory
6. Repeat the as-low-as-reasonably-achievable (ALARA) concept and the ways you can decrease your radiation dose
7. Recognize and interpret the different radiological controls and postings within the Laboratory
8. List managers' and workers' responsibilities for radiological protection
9. Employ emergency procedure information for your facility and area

14.3 Atoms, Isotopes, and Decay

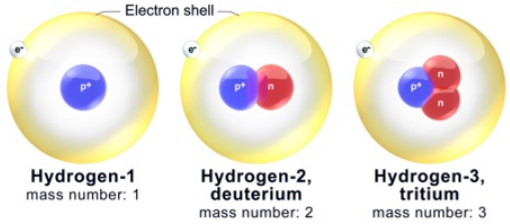


14.4 Atoms, Isotopes, and Decay

ATOMS | ISOTOPES | DECAY

ISOTOPES

Isotopes are two or more forms of the same element that contain equal numbers of protons but different numbers of neutrons. These too can have stable or unstable (radioactive) forms. As a result, isotopes do not differ from the element in their chemical properties but are different nuclear forms of an element.



14.5 Atoms, Isotopes, and Decay

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

ATOMS, ISOTOPES, AND DECAY

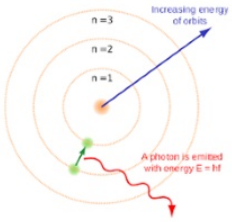
ATOMS

ISOTOPES

DECAY

DECAY

Although certain combinations of neutrons and protons result in a stable atom, too many or too few neutrons for a given number of protons result in an unstable (or radioactive) atom. These radioactive atoms can be either naturally occurring or manmade. In trying to become a stable atom, an unstable atom will release energy. This release of energy in the form of particles or waves is called radiation. This process, or capability, of certain atoms to emit radiation as they decay is called radioactivity.



14.6 Radiation

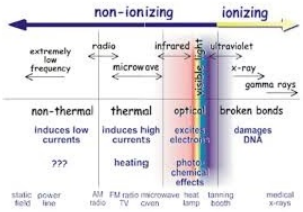
GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

RADIATION

For the purposes of this training, the two general forms of radiation are ionizing and nonionizing.

Ionization is the process of changing the number of electrons associated with an atom, resulting in a charged atom called an ion. Ionizing radiation contains enough energy to ionize, or create charged atoms. Examples of ionizing radiation include alpha, beta, neutron, and gamma or x-ray.

Nonionizing radiation does not contain enough energy to strip electrons from atoms. Examples of nonionizing radiation include visible light, radio waves, and microwaves. In this training we are concerned almost exclusively with ionizing radiation.



14.7 Radiation, Cont.

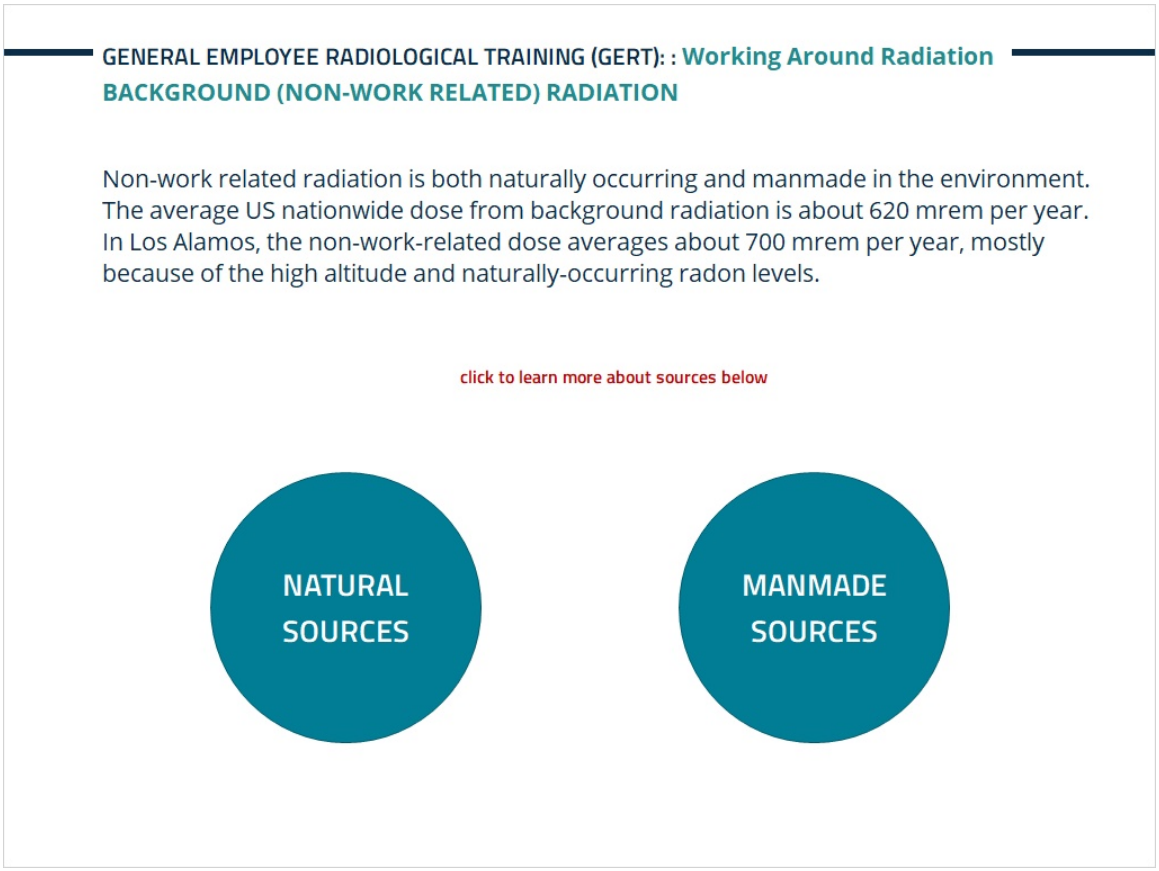
GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

RADIATION, cont.

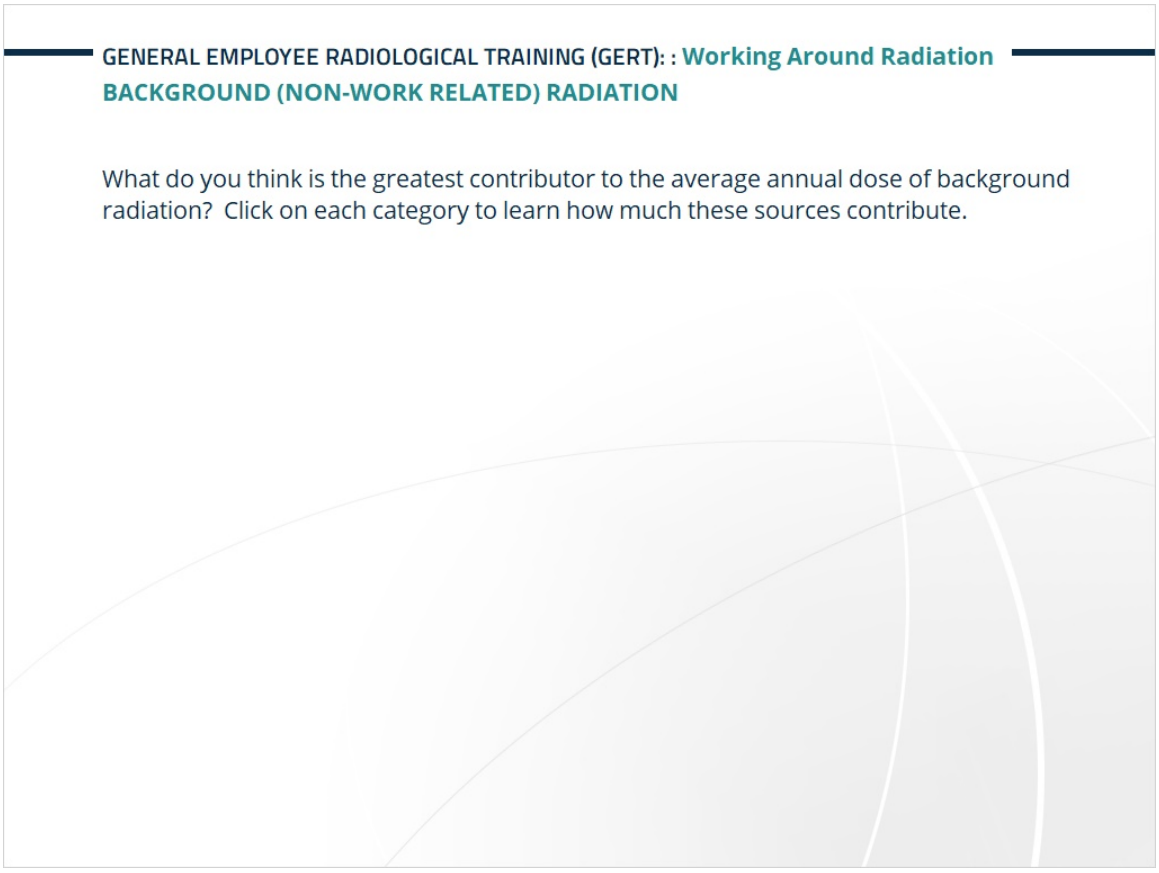
The amount of energy from ionizing radiation that a person absorbs from radiation sources is called a radiation dose. This dose can be measured using radiation dosimetry and is reported in terms of rems or millirems (mrems), which is the unit of measurement that considers the biological damage to the human body.

Ionizing radiation is present at the Laboratory as both generated and background radiation. Generated radiation is energy in the form of particles or waves from artificial or natural sources that can be used in research applications. Common sources of radiation at the Laboratory include radioactive materials and particle accelerators used in national security, medical, and scientific research activities.

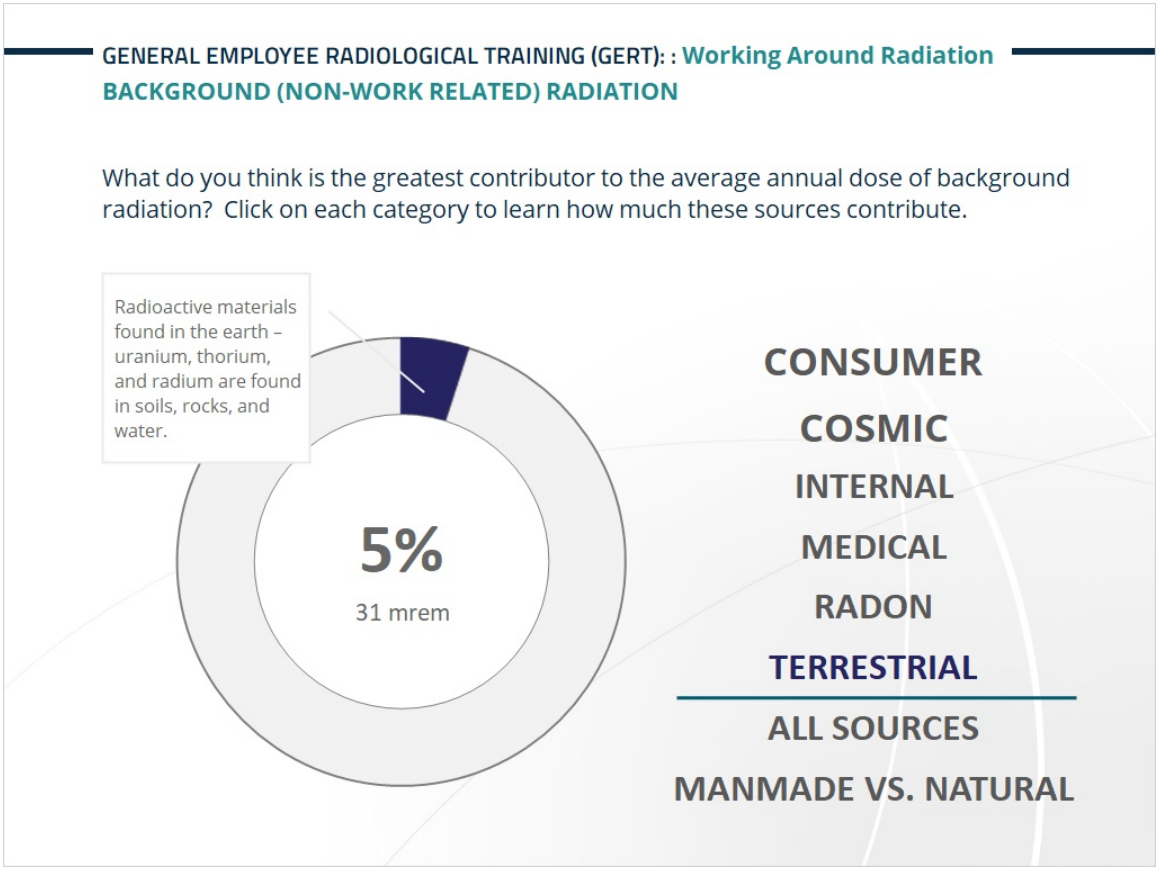
14.8 Background Radiation



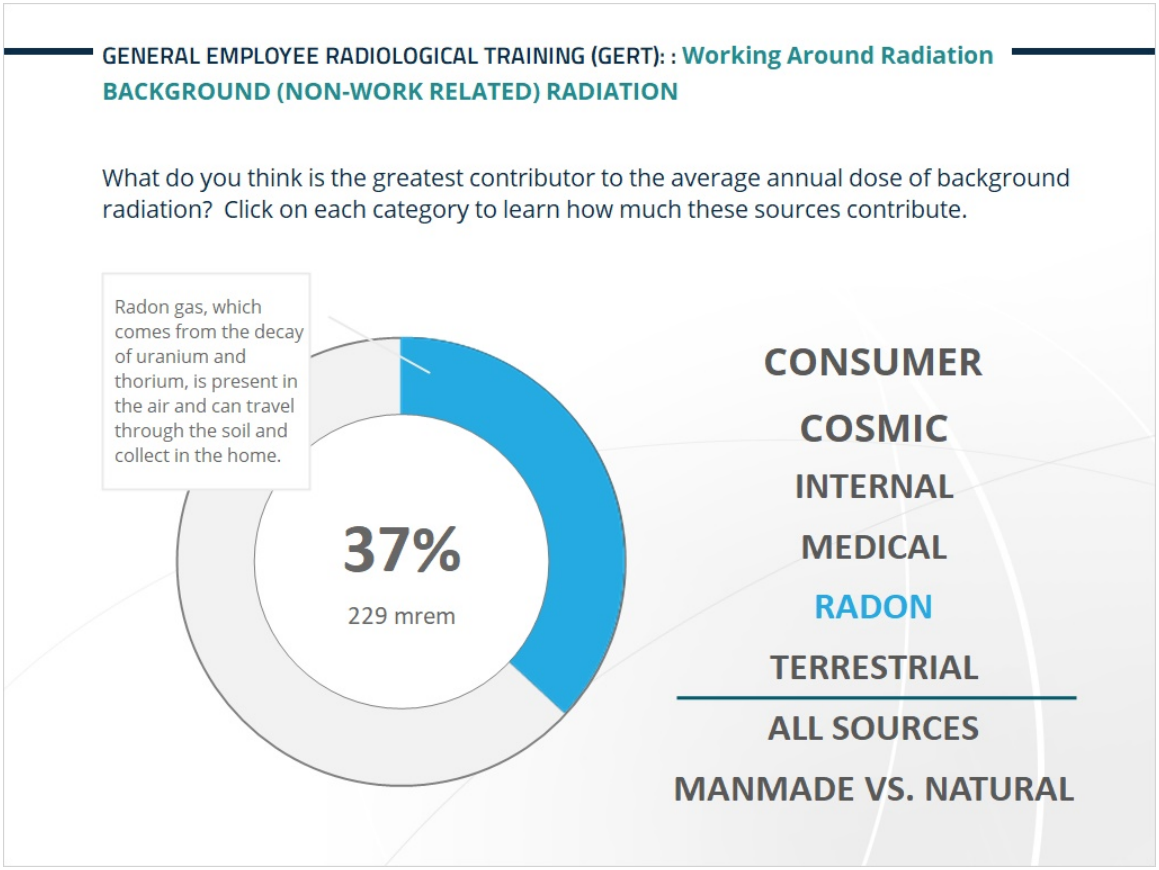
14.9 Untitled Slide



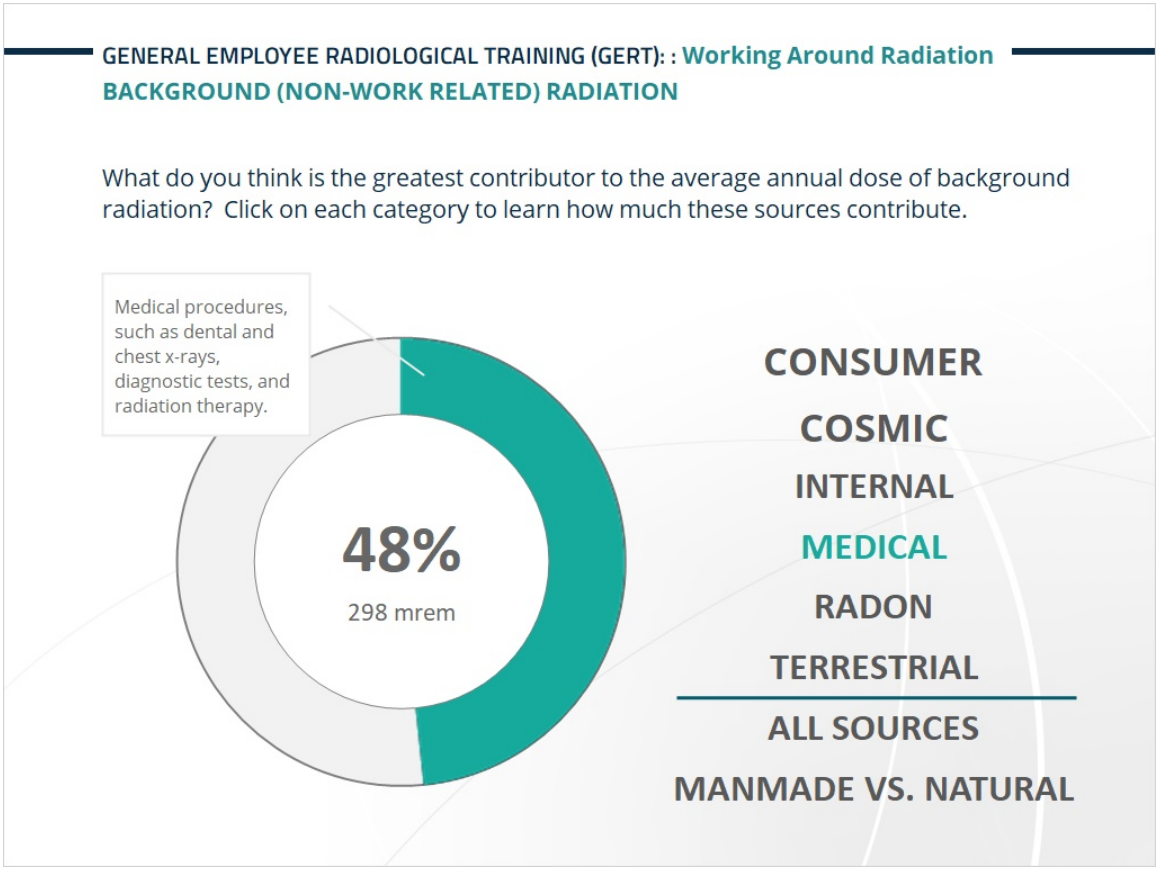
TERRESTRIAL (Slide Layer)



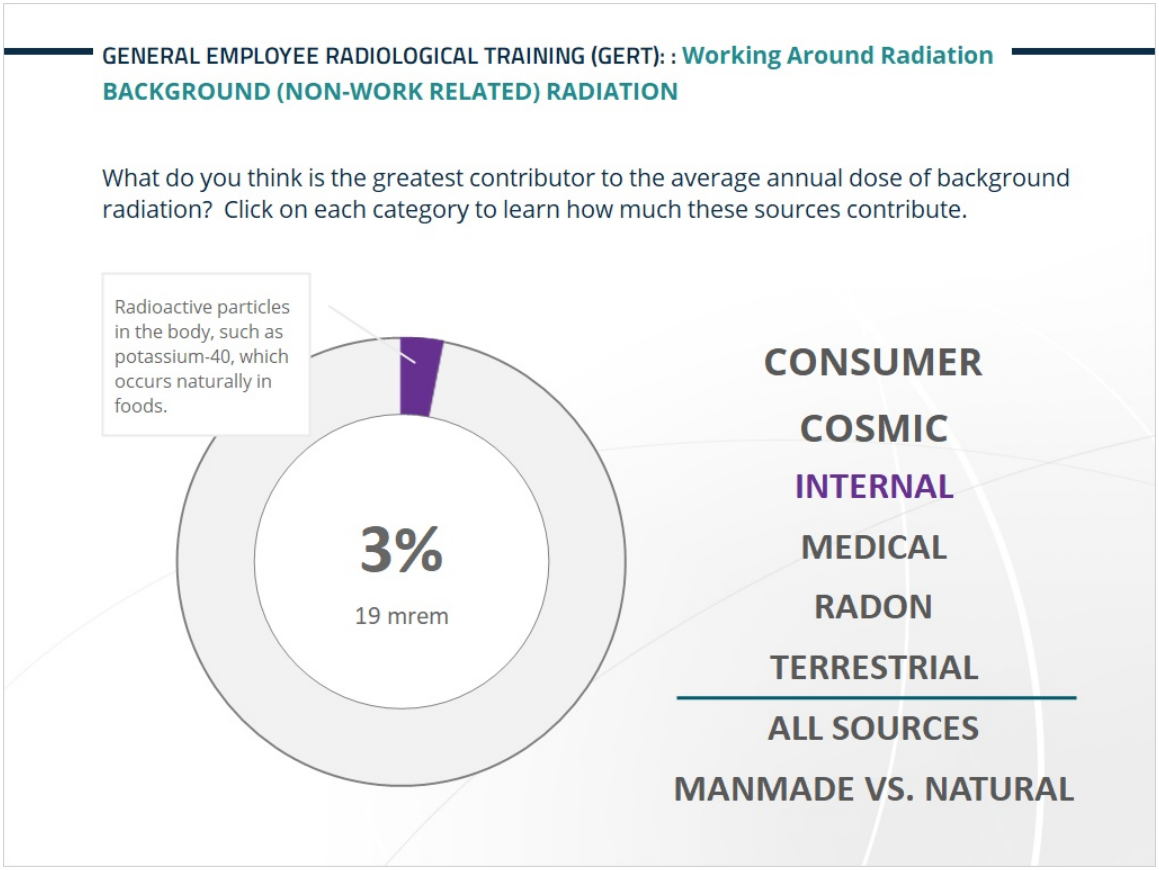
RADON (Slide Layer)



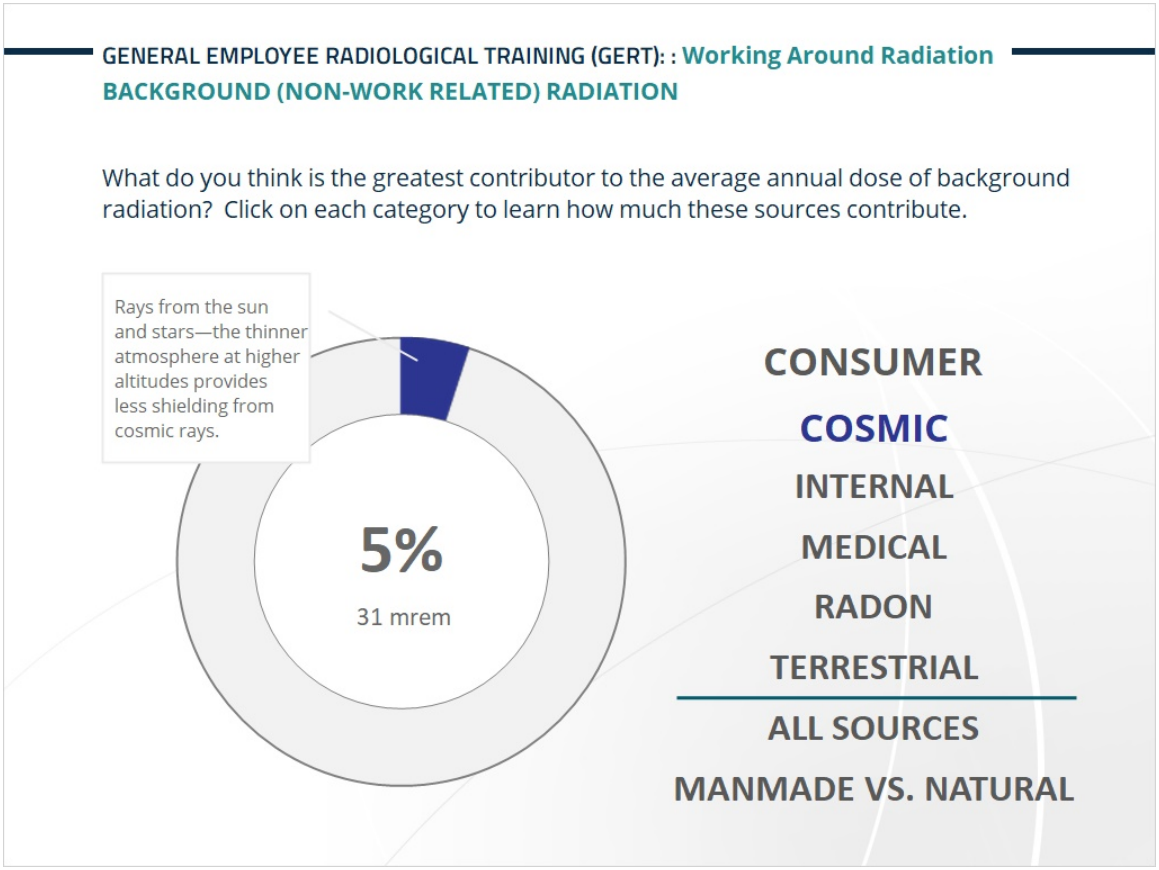
MEDICAL (Slide Layer)



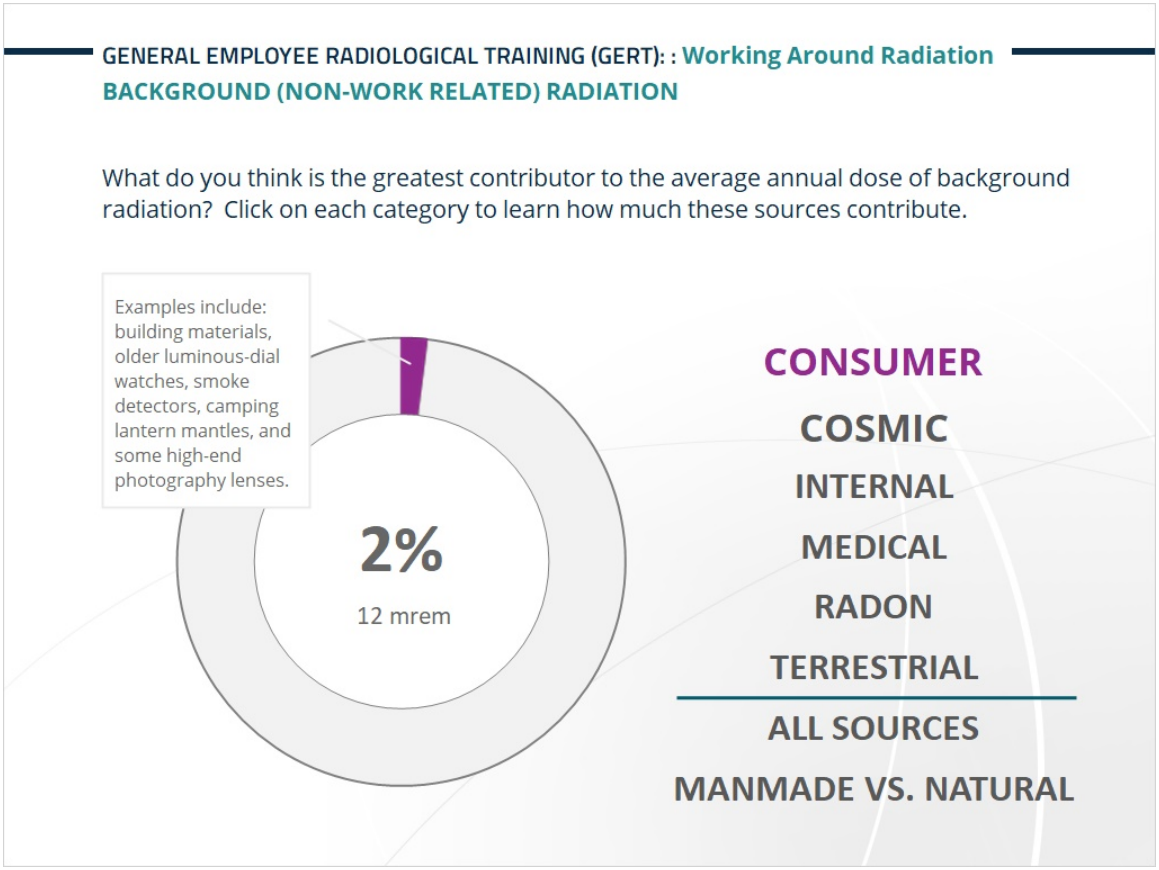
INTERNAL (Slide Layer)



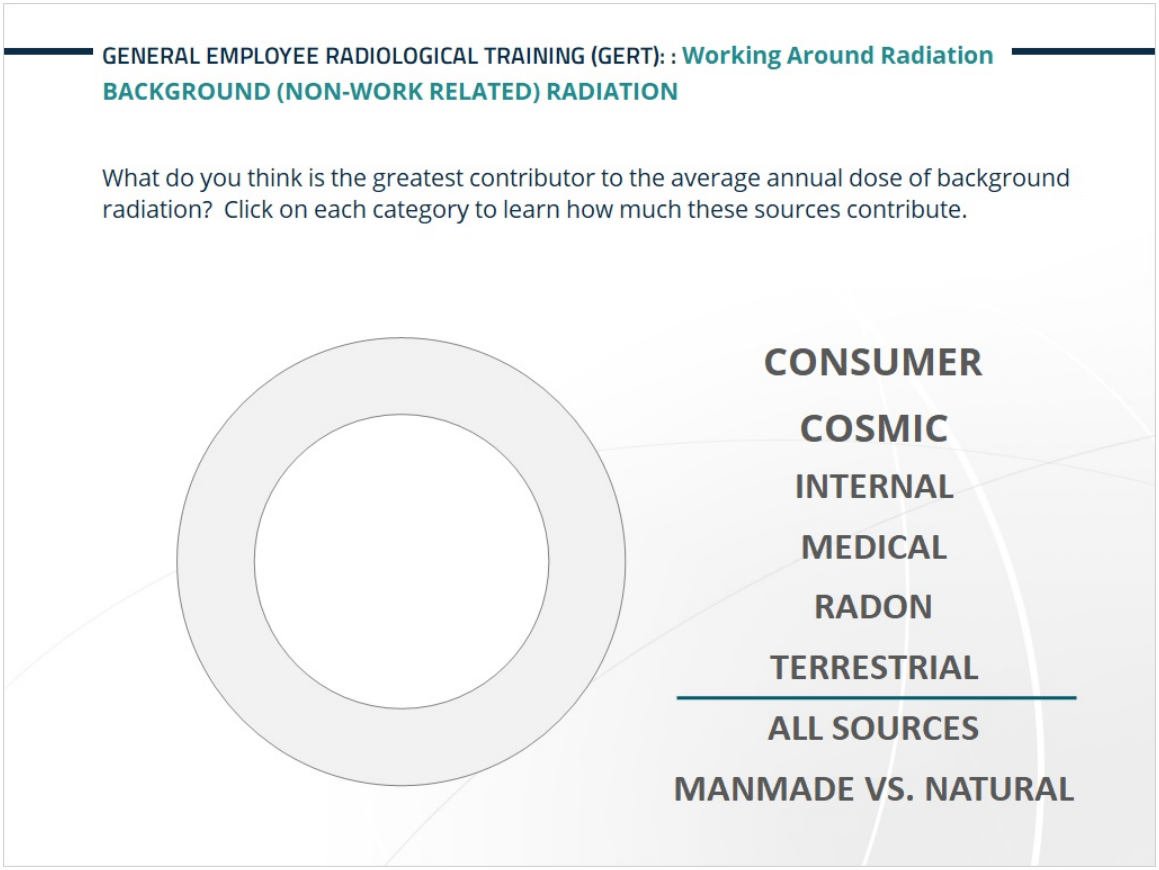
COSMIC (Slide Layer)



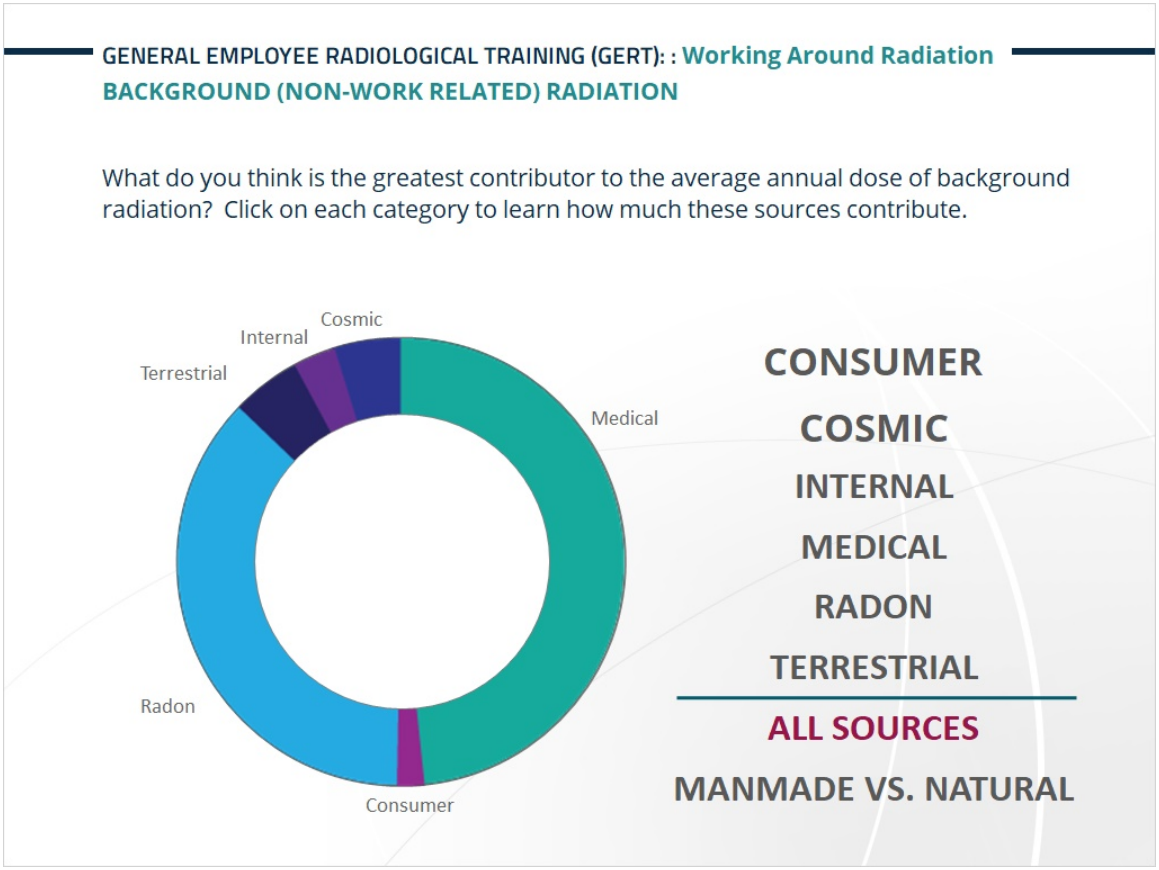
CONSUMER (Slide Layer)



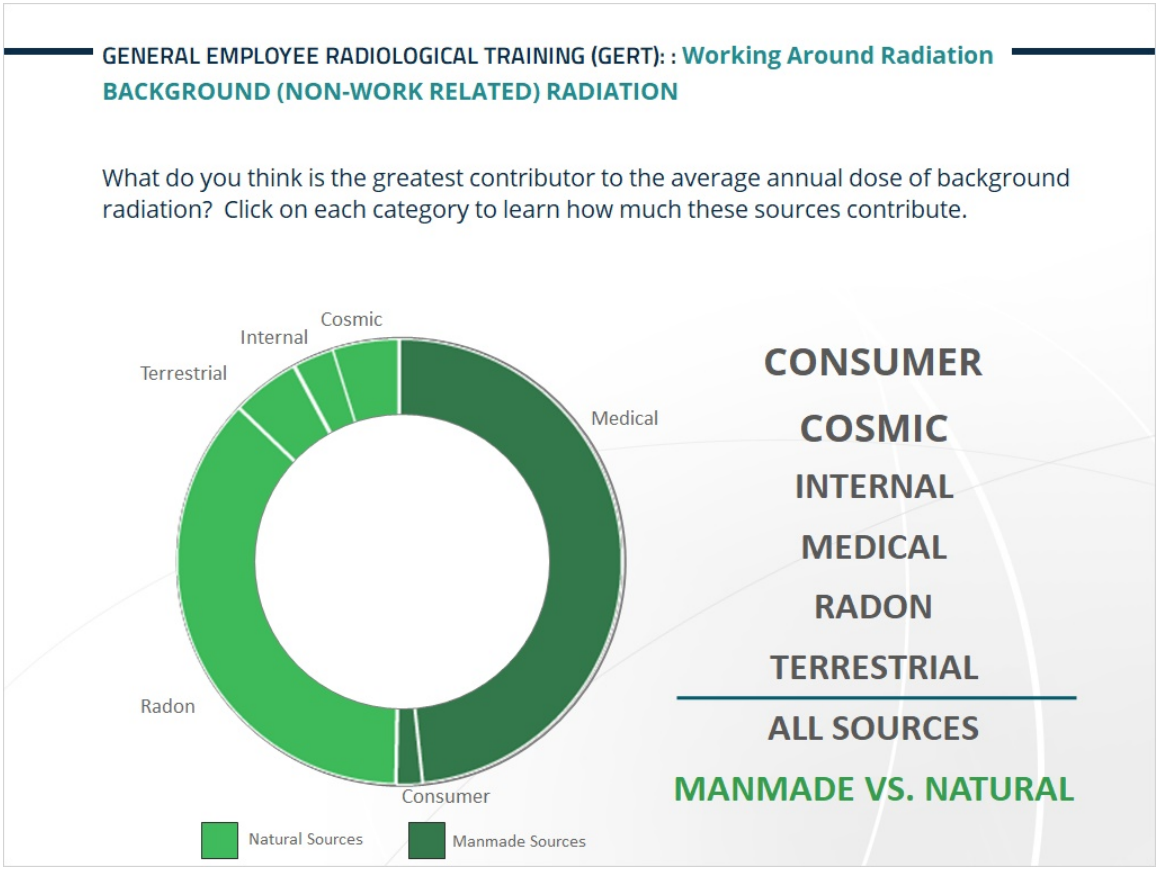
base (Slide Layer)



WHOLETHING (Slide Layer)

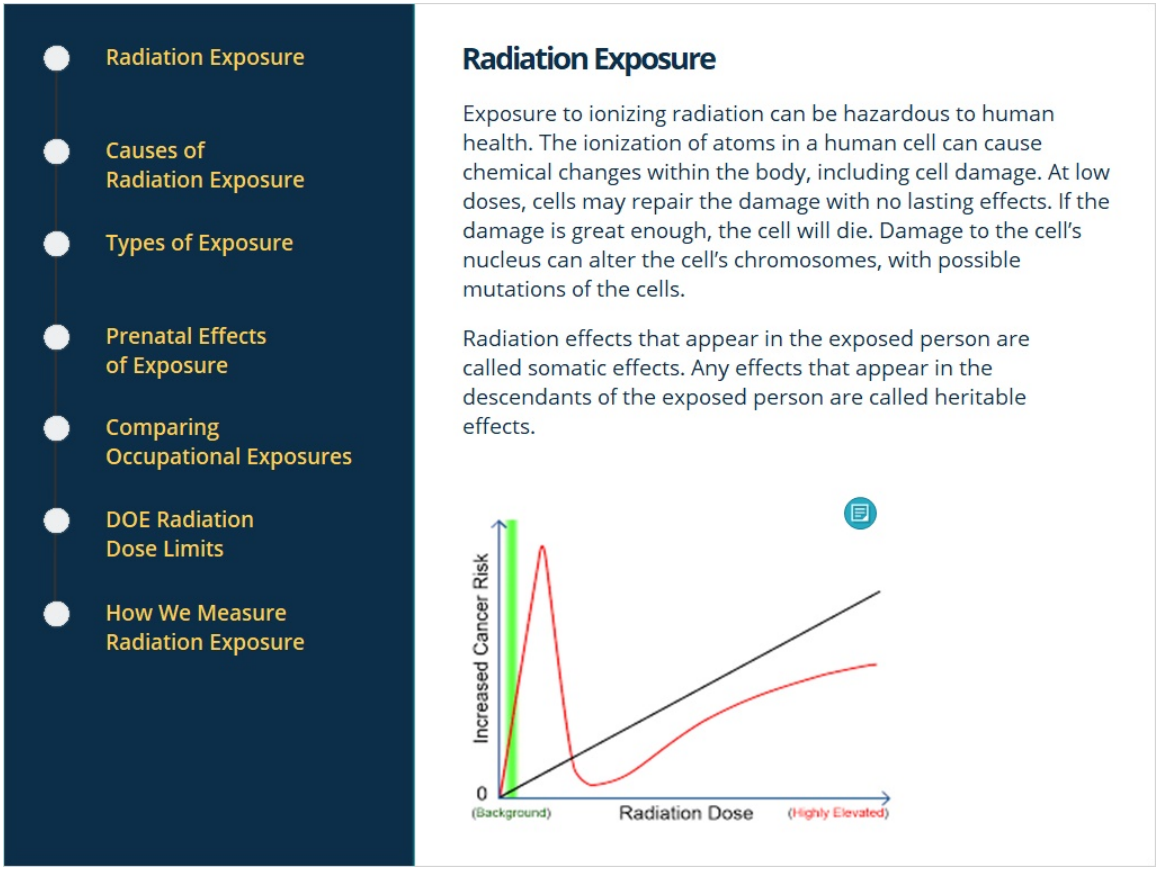


VS (Slide Layer)



14.10 Radiation Exposure

Exposure (Slide Layer)



causes-2 (Slide Layer)

- Radiation Exposure
- Causes of Radiation Exposure
- Types of Exposure
- Prenatal Effects of Exposure
- Comparing Occupational Exposures
- DOE Radiation Dose Limits
- How We Measure Radiation Exposure

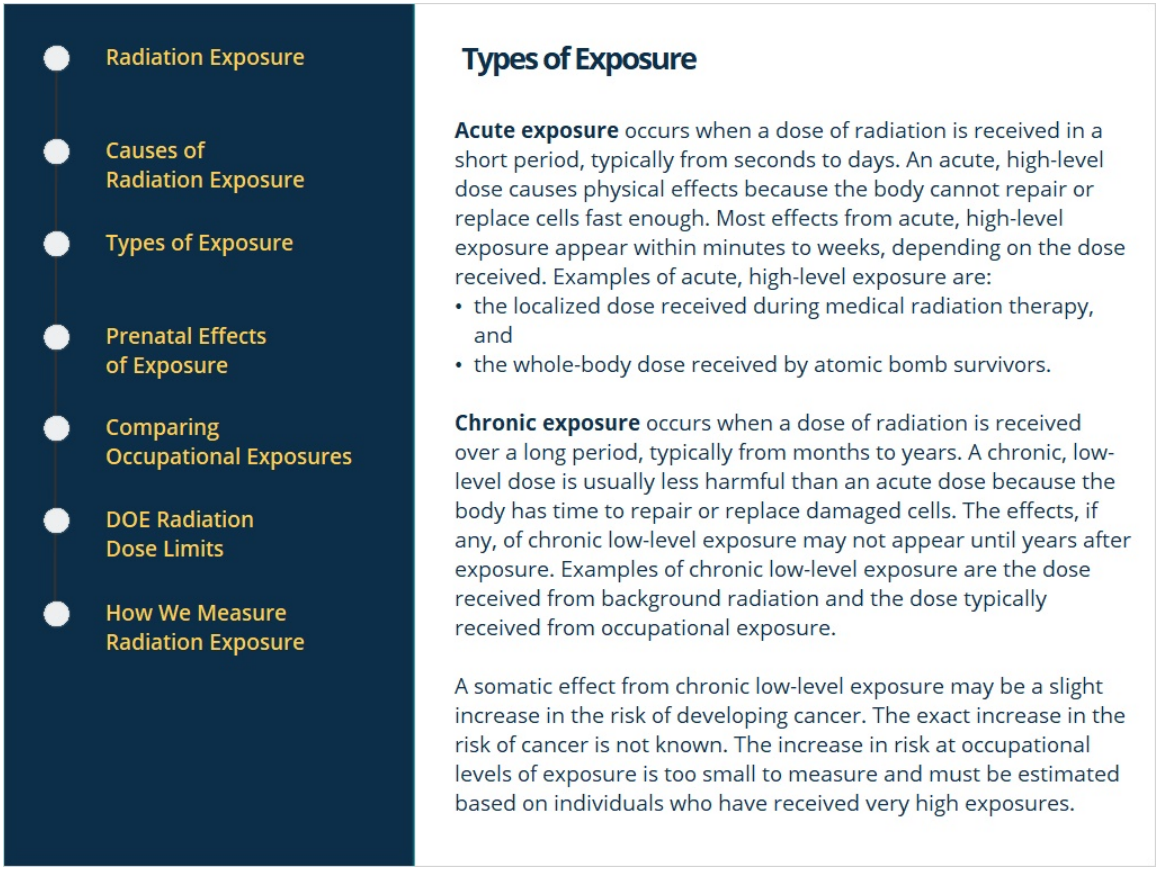
Causes of Radiation Exposure

External exposure to radiation alone does not result in contamination. Radiation is ionizing energy, whereas contamination is loss of control of a material that emits radiation. For example, you do not become contaminated with external exposure to x-rays.

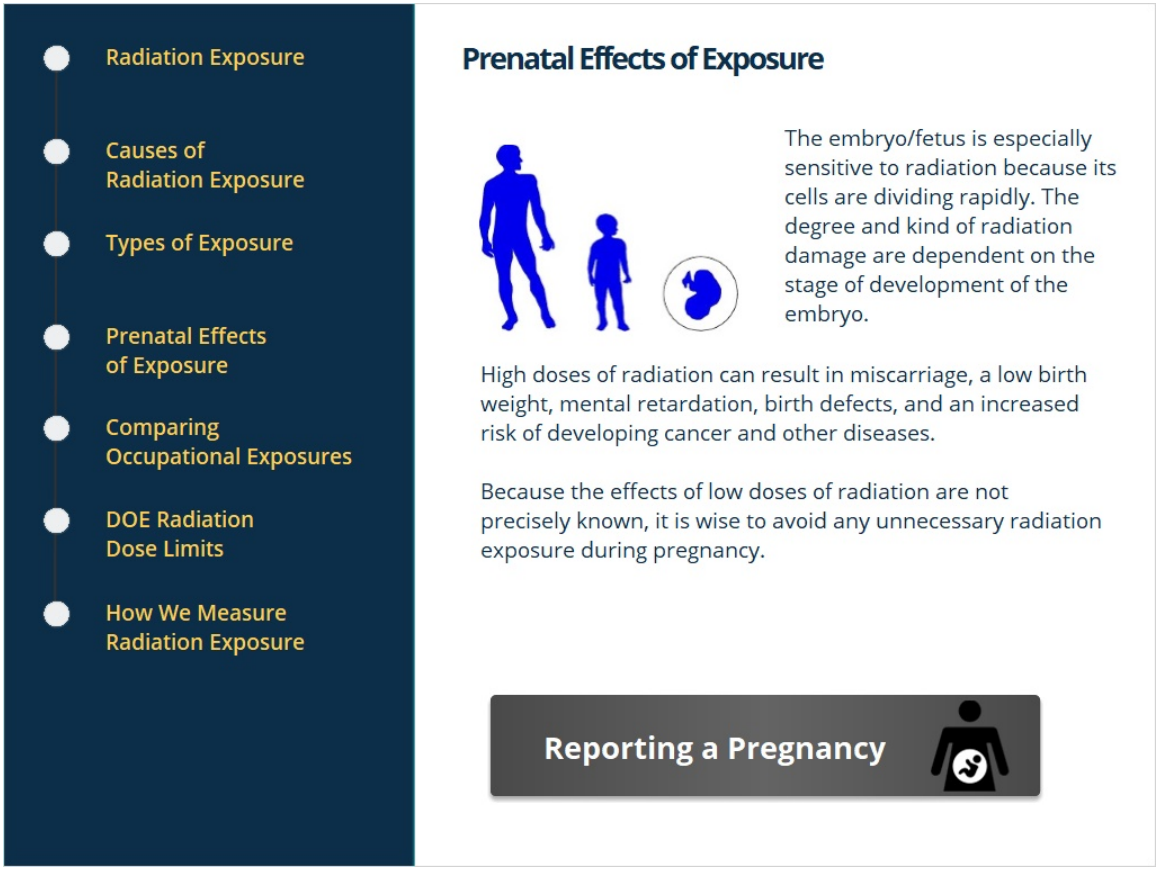
Radiation is like the heat you feel from a campfire; contamination is like the glowing embers from the campfire landing on your clothes.

Radioactive contamination at LANL is radioactive material in an undesirable or non-contained location, such as outside the glovebox or hood in which the material is being handled; in homes or offices; or in the soil, air, or other areas of the environment. Any contained radioactive material, although it emits radiation, is not contamination.

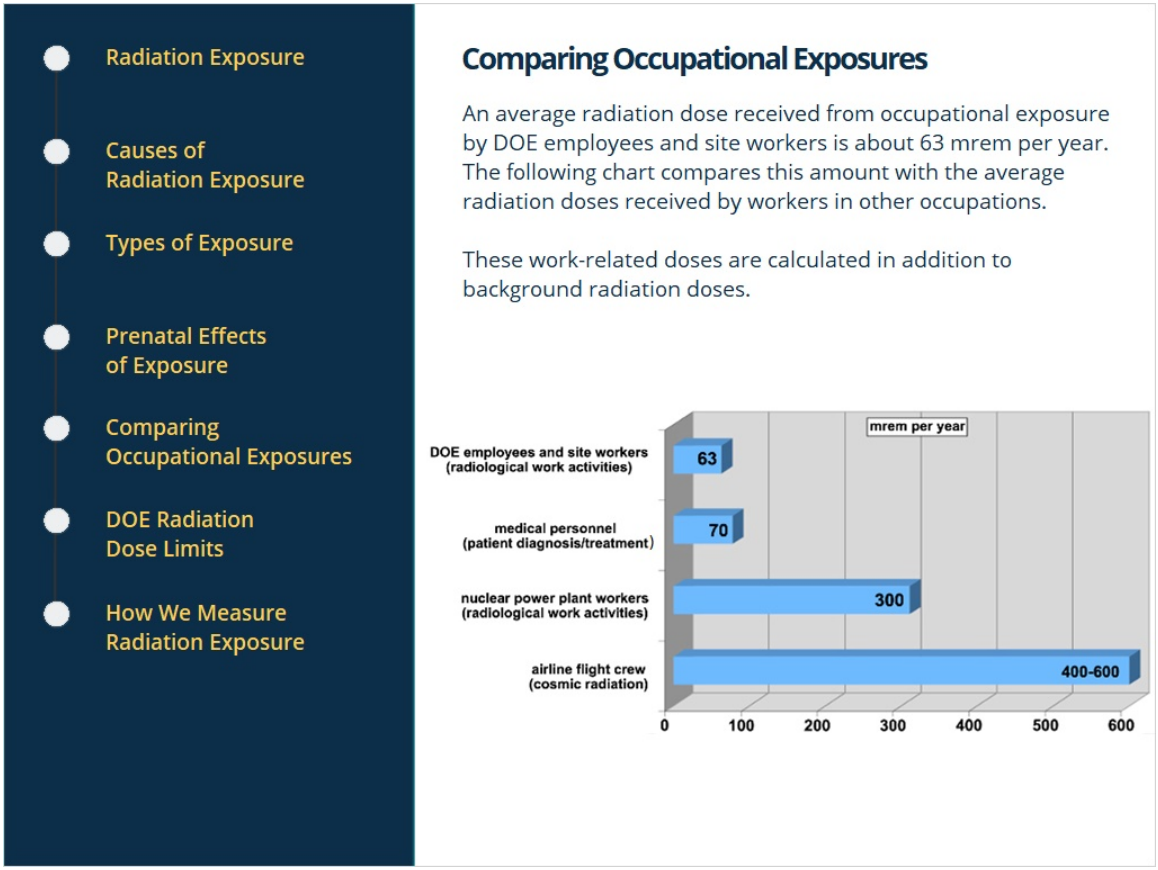
types-3 (Slide Layer)



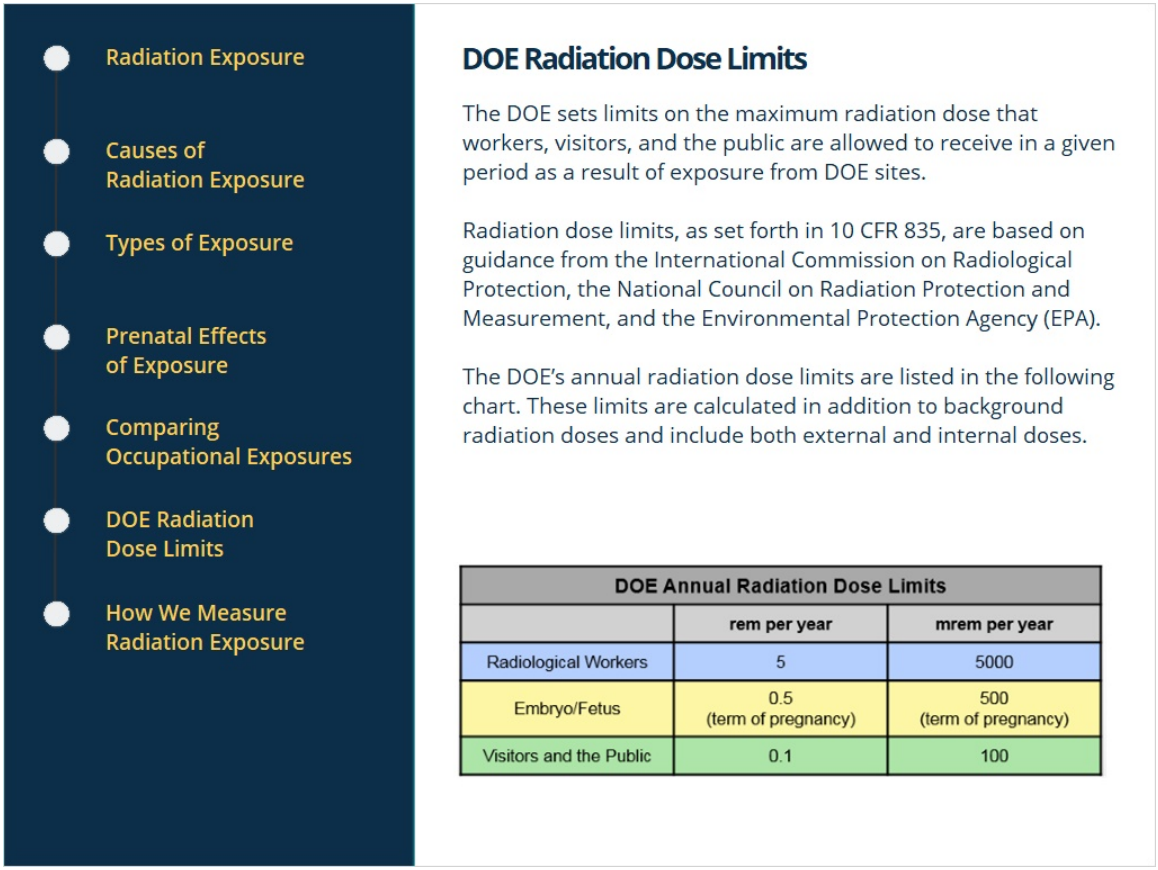
prenatal-4 (Slide Layer)



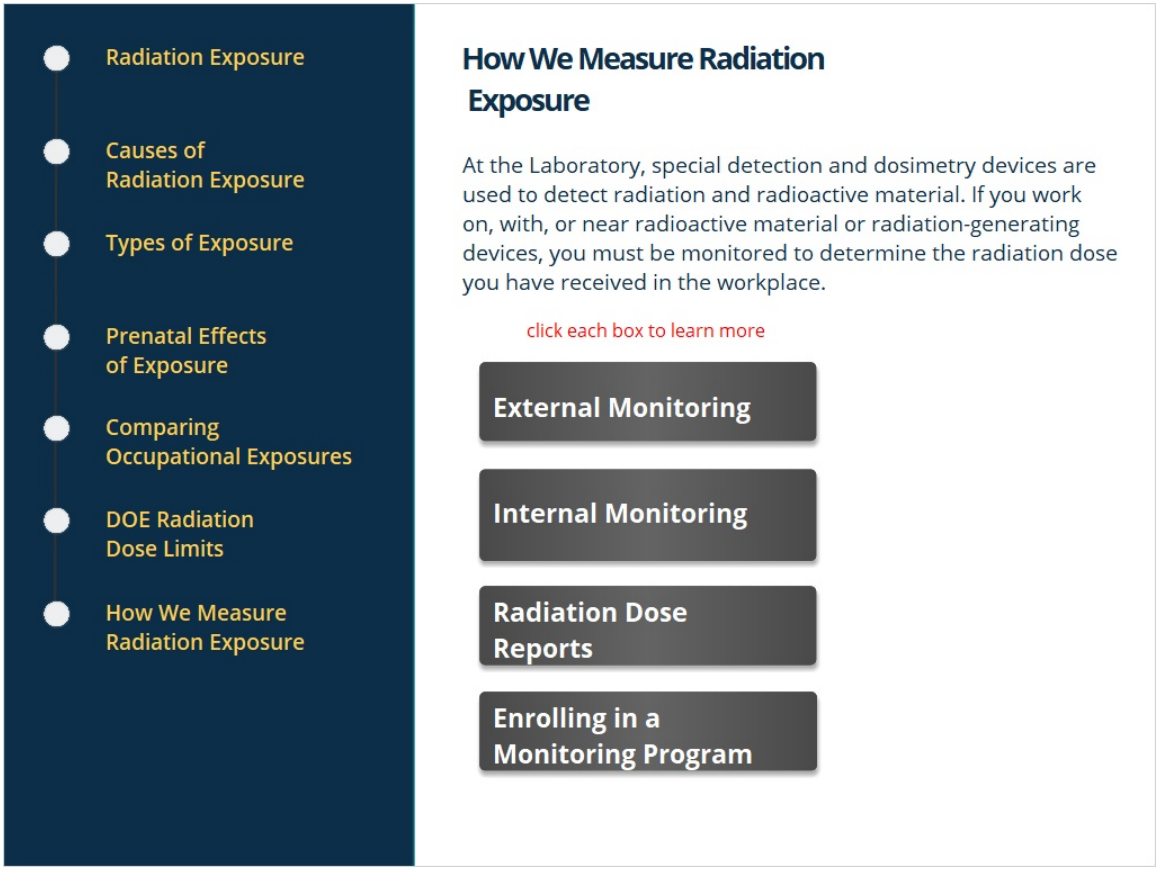
occupational-5 (Slide Layer)



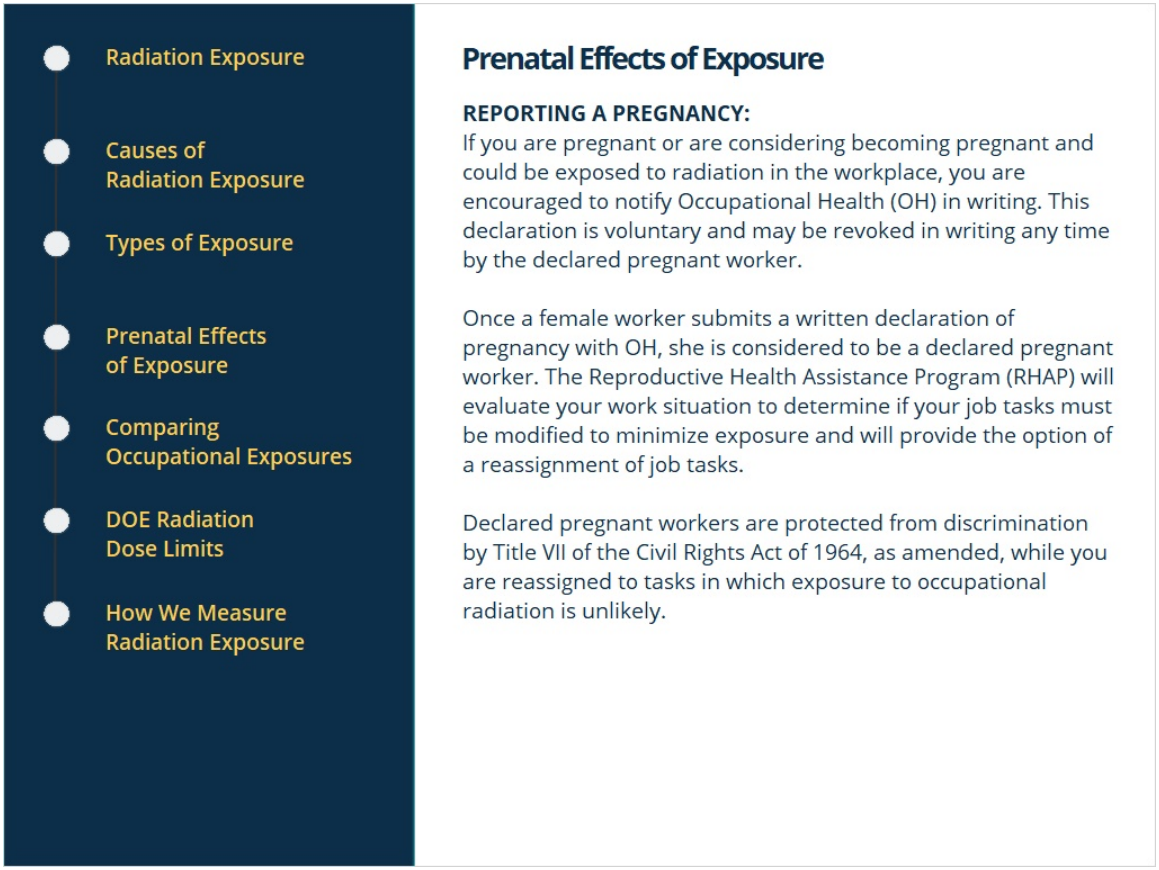
dose-limits-6 (Slide Layer)



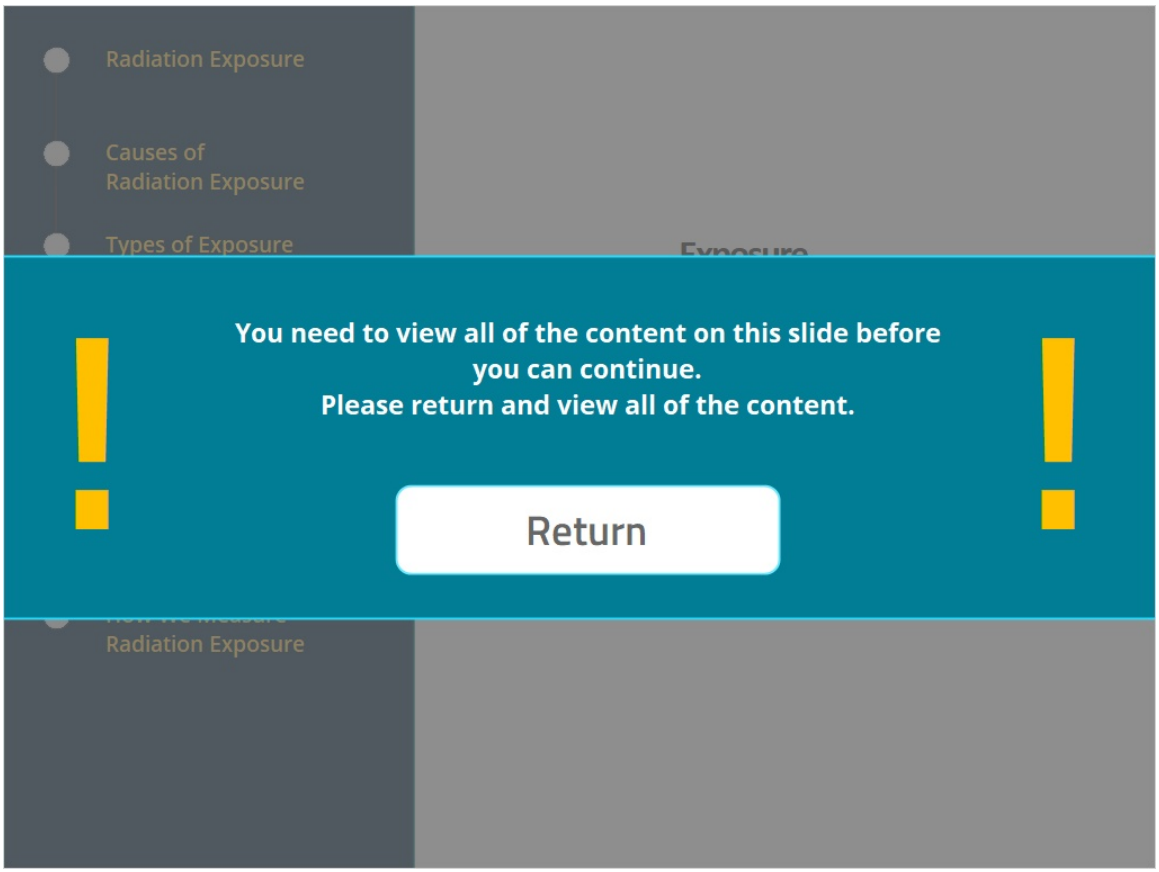
Measure (Slide Layer)



report-pg (Slide Layer)



false (Slide Layer)



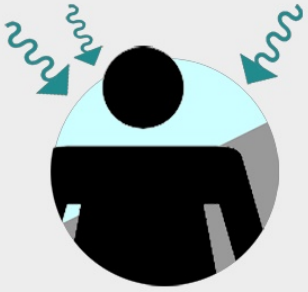
14.11 ALARA

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation ALARA**

The goal of the ALARA Program is to reduce external and internal radiation exposures to a level that is **as low as reasonably achievable** (ALARA) and well below the DOE limits. Management and radiological control personnel establish policies and procedures for the ALARA Program. However, you, the individual worker, are responsible for keeping your personal radiation dose ALARA.

click on each section to learn more

REDUCING EXTERNAL EXPOSURE



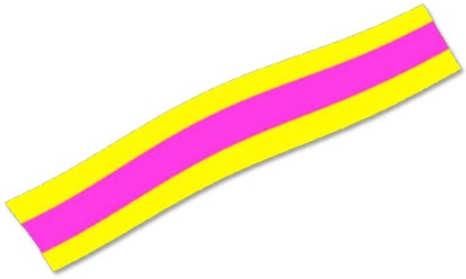
REDUCING INTERNAL EXPOSURE

14.12 Controls and Postings for Protection

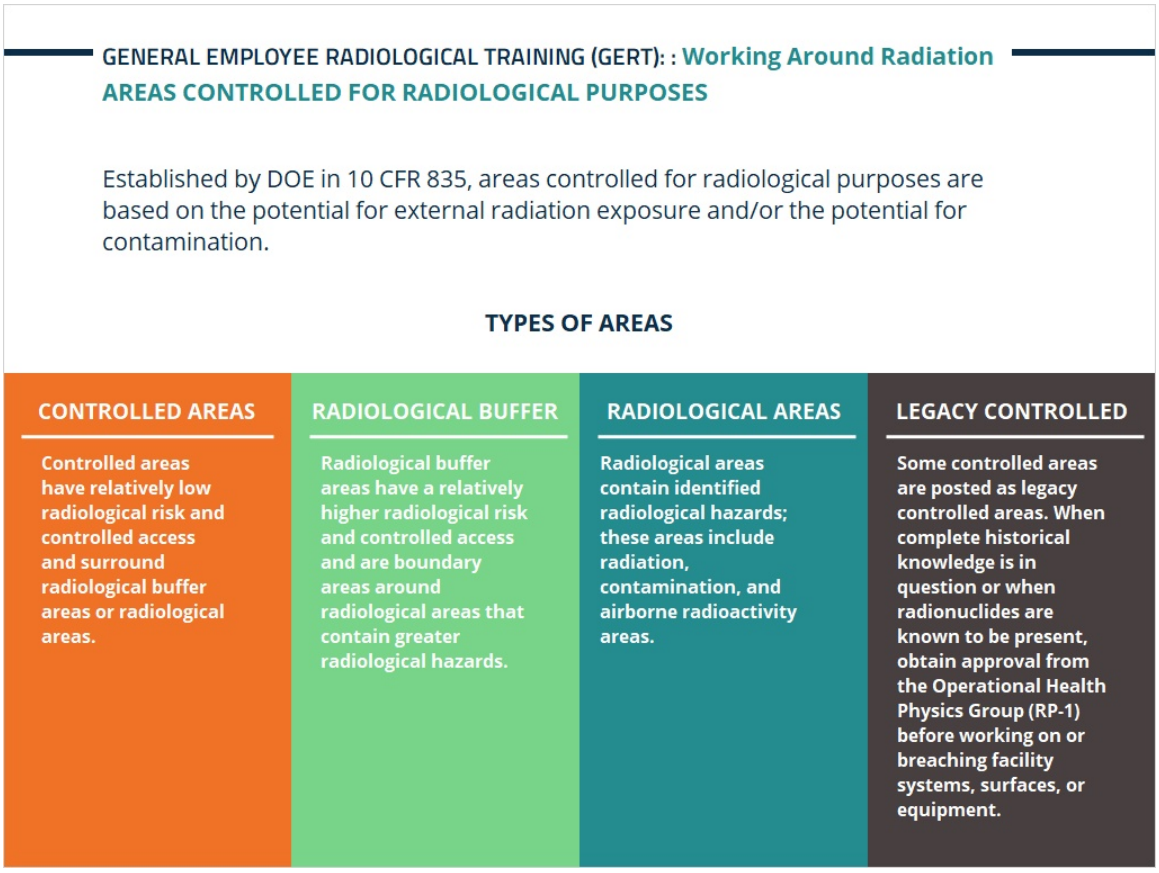
GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

CONTROLS AND POSTINGS FOR PROTECTION

In support of the ALARA concept, LANL uses various radiological controls to protect workers from exposure to radiation. All areas, materials, and machines that are controlled for radiological purposes are identified by posted signs, tags, or labels, combined with physical barriers where appropriate. The standard radiation caution symbol (trefoil), with the unique color combination of black or magenta on a yellow background, makes radiological hazards easier to recognize.



14.13 Controlled Areas



14.14 Recognizing Radiological

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

RECOGNIZING RADIOLOGICAL HAZARDS

Areas or materials that are controlled for radiological purposes are identified by one or more of the following:

- yellow and black signs bearing the trefoil with the appropriate radiological control information, posted at areas where radiological hazards exist;
- black or magenta on yellow tags and labels bearing the trefoil that identify specific radiological hazards within an area controlled for radiological purposes;
- yellow and magenta ropes, tapes, chains, or other barriers that define the boundaries of posted areas; and
- yellow plastic wrapping or labeled containers, bearing the trefoil, that package radioactive material.

Radiological Postings at the Laboratory

14.15 Entering Radiological Areas

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

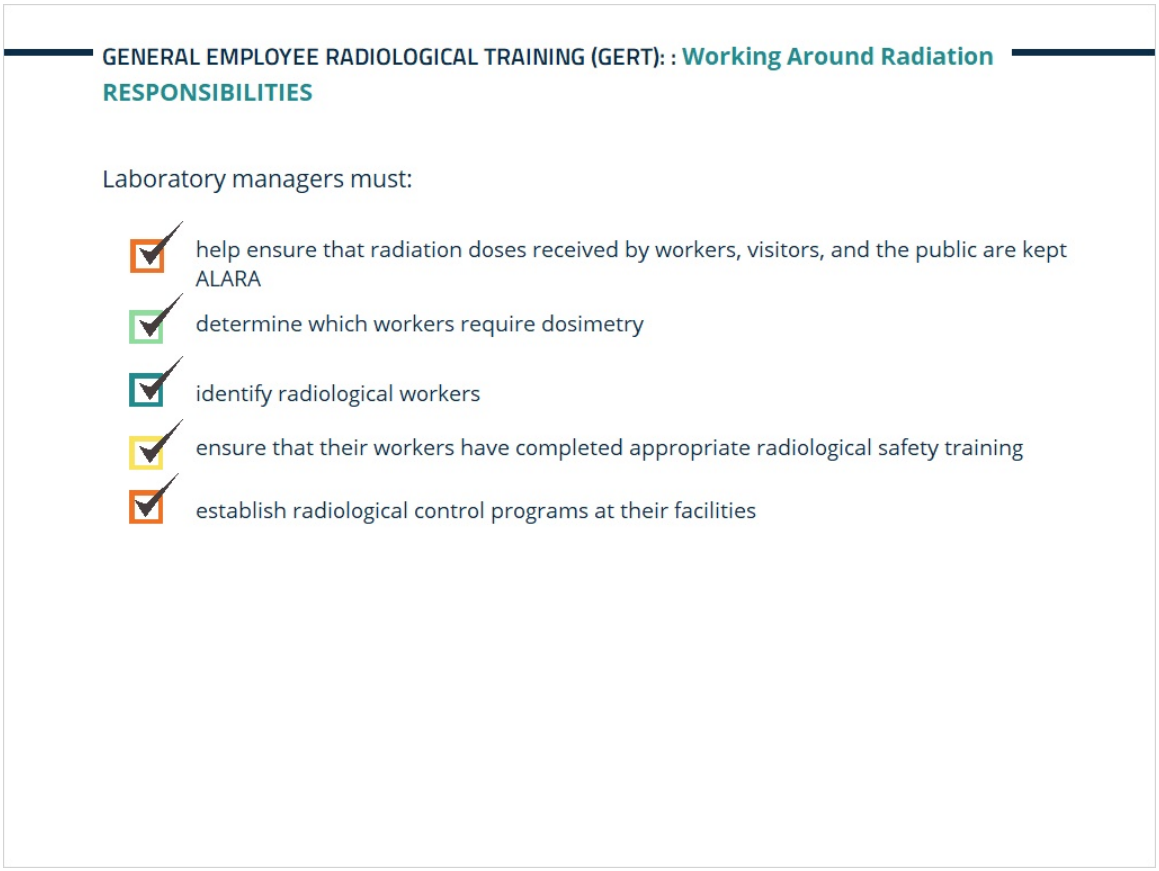
ENTERING RADIOLOGICAL AREAS

Specific training is required to enter (without a qualified escort) different areas controlled for radiological purposes. The DOE divides the workforce into general employee and radiological worker categories.

Completing General Employee Radiological Training (GERT), passing the exam, and completing required facility and job-specific training allow unescorted entry into a controlled area. Other radiological areas require additional training, such as Radiological Worker II. Unless qualified by Radiological Worker Training, workers must to retake the exam every 24 months.

This required training . . .	allows unescorted entry into a . . .
General Employee Radiological Training	Controlled Area
Radiological Worker I Training*	Controlled Area Radiological Buffer Area Radiation Area High Radiation Area
Radiological Worker II Training	Controlled Area Radiological Buffer Area Radiation Area High Radiation Area Very High Radiation Area Contamination Area High Contamination Area Soil Contamination Area Airborne Radioactivity Area
*LANL offers GERT and Radiological Worker II training programs	

14.16 Managers' Responsibilities



14.17 Workers' Responsibilities

14.18 Emergency Information

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

EMERGENCY INFORMATION

Organization » PADOPS » ADNHHO » NCSD

Nuclear Criticality Safety

Nuclear Criticality Safety Division

Nuclear Criticality

Some nuclear materials are fissile materials, which means that if concentrated in a solution or brought closely together as solids in sufficient quantity, they spontaneously emit harmful levels of radiation. Although criticality experiments are conducted as part of the Laboratory's scientific research, a criticality accident results when it occurs in an uncontrolled environment.

A criticality accident is a very localized event, causing injury or death to individuals in the immediate area from an acute, high-level dose of radiation, but typically not causing a physical explosion or equipment damage.

The control of fissile materials to prevent such accidents is called nuclear criticality safety. The Laboratory's Nuclear Criticality Safety (NCS) Division provides nuclear criticality safety expertise to all Laboratory facilities where plutonium and uranium are handled.

If your job assignment involves working with or near fissile materials, you will receive additional training on nuclear criticality safety.

14.19 Emergency Information, Cont.

GENERAL EMPLOYEE RADIOLOGICAL TRAINING (GERT): : **Working Around Radiation**

EMERGENCY INFORMATION, Cont.

Information Specific to Facilities and Work Areas

Emergency procedures and alarms at the Laboratory vary for different facilities and work areas. You should know

- the emergency procedures specific to your work area,
- the warning sirens or alarms specific to your work area, and
- how to contact the RCT assigned to your work area.

In an emergency, call 911

14.20 Course Completion